SERVICE MANUAL

AM/FM STEREO RECEIVER

SX-300

FVW, NBW

SOUND PROJECT

BY PIONEER MODEL300

KUW, KCW

NOTE:

THE SX-300 AND THE MODEL 300 COME IN TWO VERSIONS EACH DISTINGUISHED AS FOLLOWS:

Round label on rear panel		Voltage	Type
SX-300	FVW	5-position selector	General export model
	NBW	220V only	SEMCO (Sweden), NEMCO (Norway) and DEMCO (Denmark) approved
Model 300	KUW	120V only	UL approved (U.S.A.)
	KCW	120V only	CSA approved (Canada)

<73102Y31L>

PIONEER®

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1. SPECIFICATIONS

SEMICONDUCTORS

FET 1
Transistors 31
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AMPLIFIER SECTION

Continuous Power Output
1kHz (Both channels driven) . . . . . 7W+7W (8Ω), 7W+7W (4Ω)
1kHz (Each channel driven) 10W/10W (8Ω), 12W/12W (4Ω)
Harmonic Distortion (Continuous Power
Output) . . . . . Less than 1%
(1W+1W Power Output) . . . . . Less than 0.2%
Intermodulation Distortion (Continuous
Power Output) . . . . . Less than 1%
(1W+1W Power Output) . . . . . Less than 0.5%
Power Bandwidth (IHF, Both channels
driven) . . . . . 25Hz~60kHz (T.H.D. 1%)
Output: Speaker . . . . . A, B, A+B (4~16Ω)
Headphones . . . . . 4~16Ω
Damping Factor (1kHz. 8Ω) . . . . . More than 20
Residual Hum & Noise (8Ω Pre & Power
amplifier) . . . . . Less than 0.6mV
Input Sensitivity/ Impedance
PHONO 2.5mV/50kΩ
AUX 150mV/100kΩ
TAPE MONITOR 150mV/100kΩ
TAPE MONITOR (DIN connector) . . 150mV/100kΩ
Output Level/Impedance
TAPE REC 150mV
TAPE REC (DIN connector) 30mV/80kΩ
Frequency Response
PHONO (RIAA equalization) . . . . . 30Hz~15kHz ±1dB
AUX, TAPE MON . . . . . 30Hz~20kHz ±1dB
Tone Control
BASS . . . . . +9dB, −9dB (100Hz)
TREBLE . . . . . +8dB, −11dB (10kHz)
Loudness Contour (Volume control set at
−40dB Position) . . . . . +10dB (100Hz), +5dB (10kHz)
Hum & Noise (IHF, short circuited, A Network)
PHONO . . . . . More than 70dB
AUX, TAPE MON . . . . . More than 80dB

FM TUNER SECTION

Usable Sensitivity (IHF) 2.3μV
Capture Ratio (IHF) 3.5dB
Signal-to-Noise Ratio 65dB
Image Rejection (98MHz) . . . . . More than 50dB
IF Rejection (98MHz) . . . . . More than 80dB
Spurious Rejection . . . . . More than 70dB
AM Suppression 45dB
Harmonic Distortion
Mono . . . . . Less than 0.6%
Stereo . . . . . Less than 0.8%
Stereo Separation
1kHz . . . . . More than 40dB
Sub carrier Suppression 35dB
Antenna Input . . . . . 300Ω Balanced
75Ω Unbalanced

AM TUNER SECTION

Sensitivity
(IHF, Ferrite antenna) 300μV/m
(IHF, Ext. antenna) 15μV
Signal-to-Noise Ratio 50dB
Image Rejection . . . . . More than 45dB
IF Rejection . . . . . More than 35dB
Antenna . . . . . Built-in Ferrite Loopstick Antenna

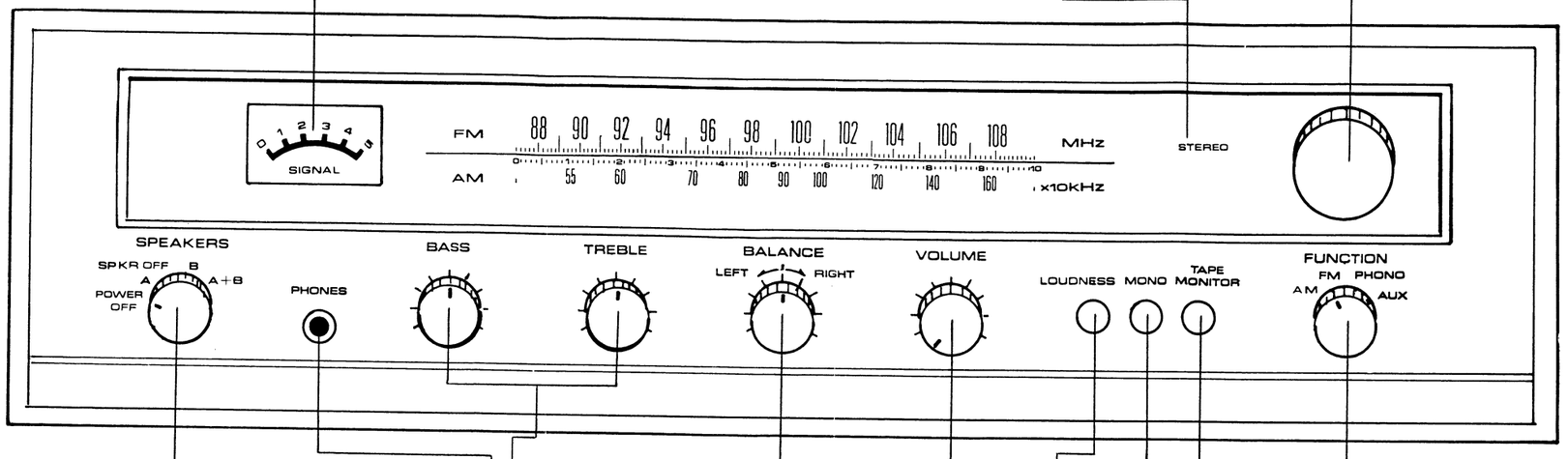
MISCELLANEOUS

Power Requirements . . . . . AC120V, 60Hz or 110V, 120V, 130V, 220V and 240V (Switchable)50Hz or 60Hz
Power Consumption 65W
AC Outlets . . . . . Switched 1, Unswitched 1
Dimensions . . . . . 441(W) x 132(H) x 324(D)mm
17-3/8 x 5-3/16 x 12-3/4 in
Weight: Without package . . . . . 6kg (13 lb)
With package . . . . . 8kg (18 lb)

Furnished Parts
FM T-type Antenna 1
Operating Instructions 1

NOTE:
Specifications and the design subject to possible modification without notice due to improvements.

2. FRONT PANEL FACILITIES



SIGNAL METER

Meter for indicating receiving signal strength.

STEREO INDICATOR

This indicator will light up when the broadcast is in stereo.

TUNING KNOB

Rotate to tune in AM or FM reception.

SPEAKERS SWITCH

A combination of the power ON/OFF switch and the speaker system selector switch.

POWER OFF:	The equipment is off.
A:	Speaker systems connected to speaker outputs A operate.
SPKR OFF:	All speakers off. Use this position when listening through headphones.
B:	Speaker systems connected to speaker outputs B operate.
A+B:	Both speaker systems A and B operate.

HEADPHONE JACK

Stereo headphones can be plugged into this jack.
A wide variety of quality headphones is available from Pioneer.

BASS & TREBLE CONTROLS

Control bass and treble. Turning each control clockwise (counterclockwise) from the center position will boost (diminish) the tone.

BALANCE CONTROL

For balancing the relative sound volume of the left and right channel speakers. Clockwise rotation will reduce the volume from the left speaker, counterclockwise rotation will decrease the volume from the right speaker.

VOLUME CONTROL

Controls the listening volume. Clockwise rotation will increase the volume.

LOUDNESS SWITCH

Depress when listening at low volume levels for proper sound balance relative to human ear sensitivity.

MODE SWITCH

This switch is used for selecting stereo or mono sound.

STEREO:	Remain unpushed.
MONO:	Push the switch for monophonic sound into which the left and right channel signals blend.

TAPE MONITOR SWITCH

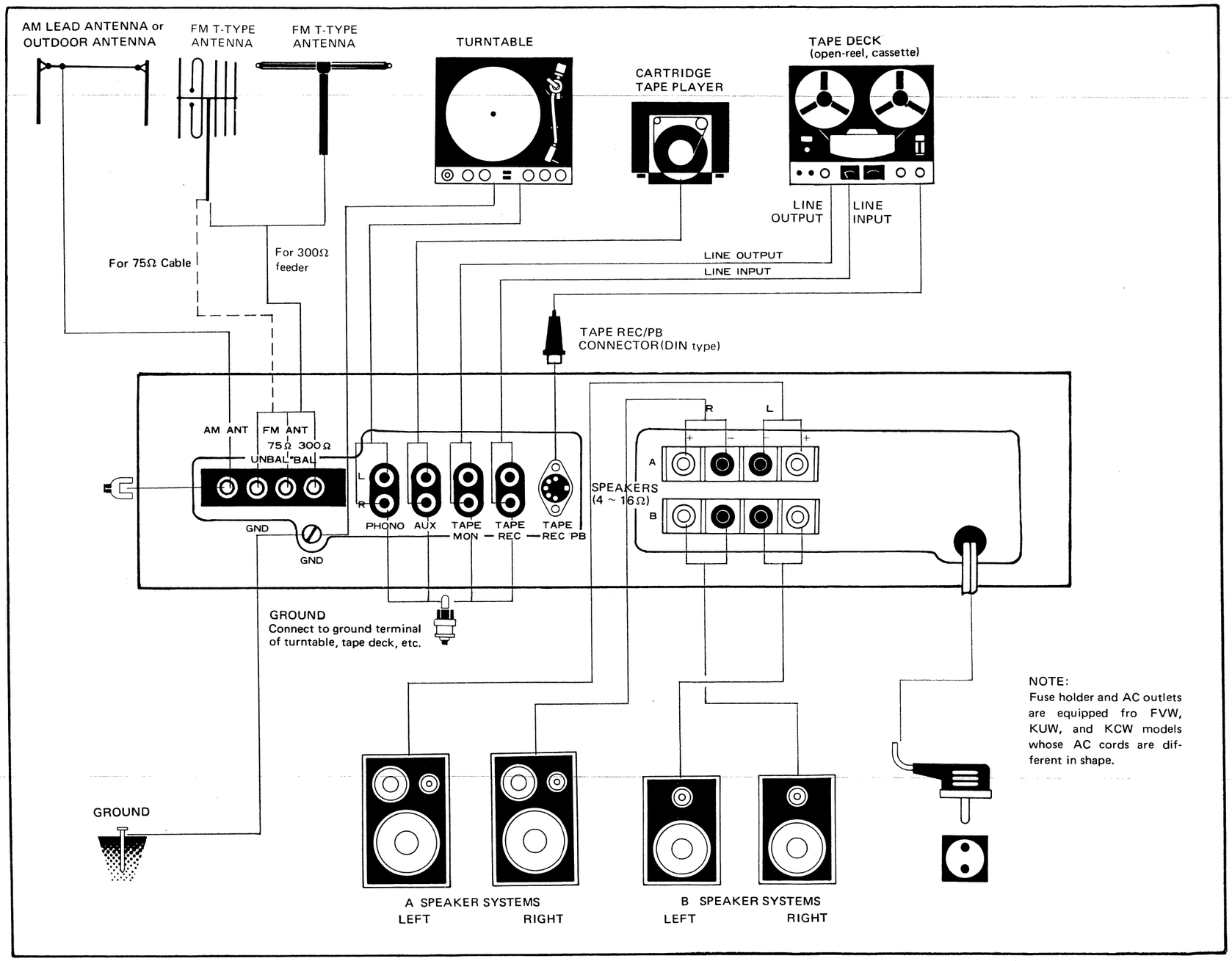
This switch is set to ON (depress) for monitoring a recording now in progress and for playback of recorded tapes, when the tape deck is connected to the TAPE MON jacks and TAPE REC jacks or TAPE REC/PB connector.

FUNCTION SWITCH

This selects the program source:

AM:	AM reception.
FM:	FM reception with automatic switching for either of stereo or mono programs.
PHONO:	When playing records on turntable connected to the PHONO terminals.
AUX:	When playing component connected to the AUX terminals.

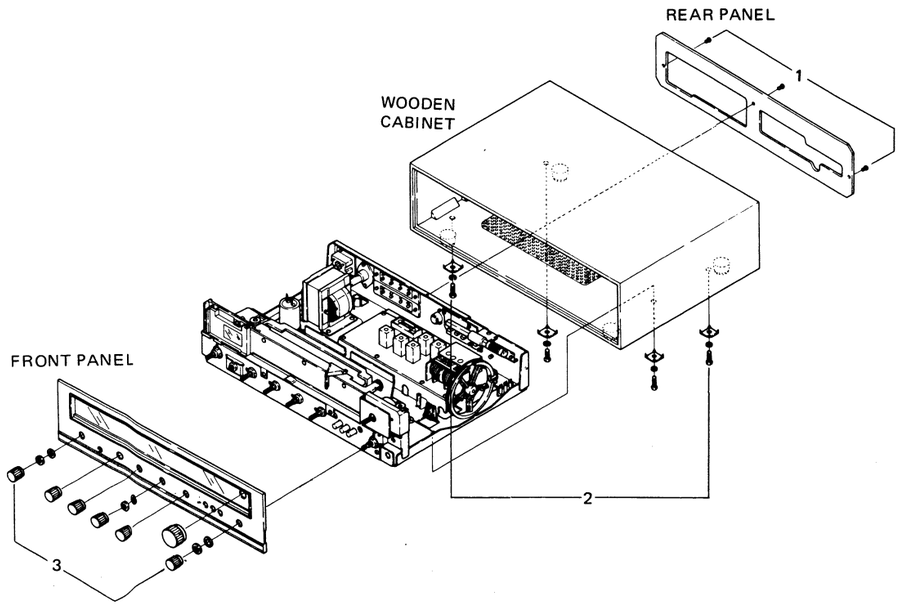
3. CONNECTION DIAGRAM



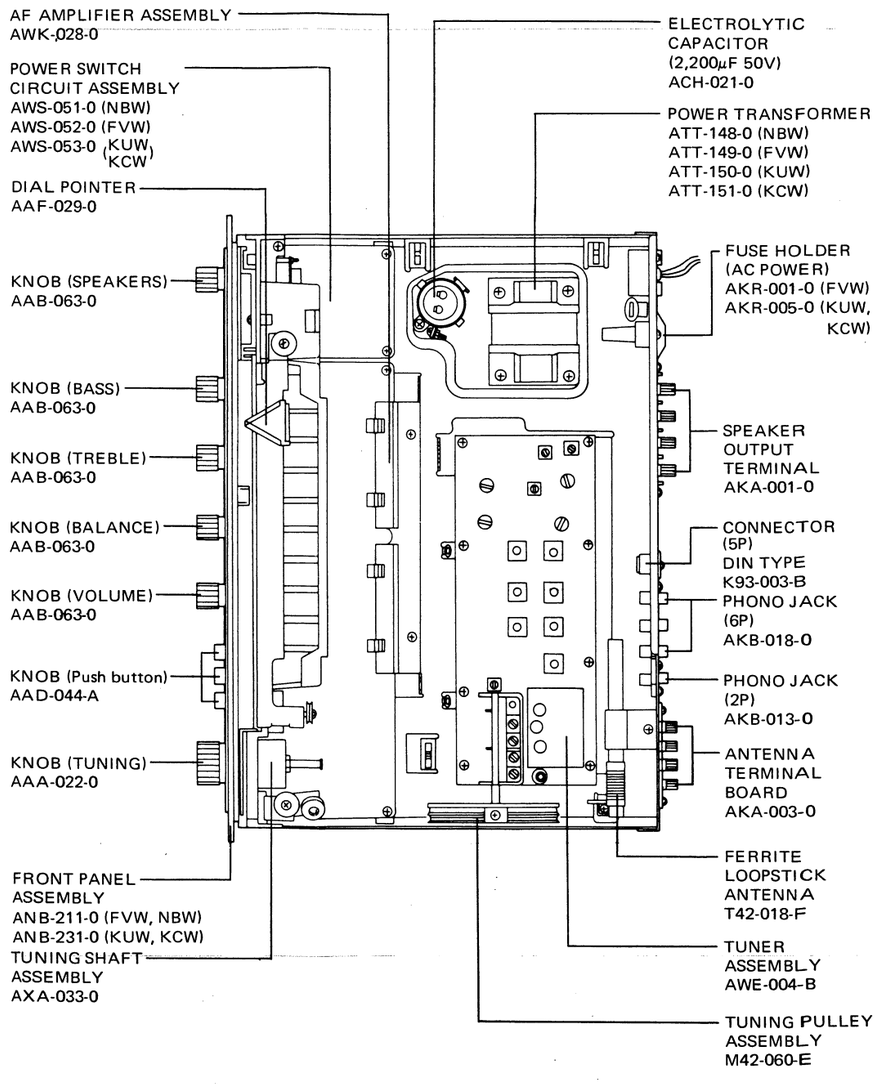
NOTE:
Fuse holder and AC outlets are equipped fro FVW, KUW, and KCW models whose AC cords are different in shape.

4. DISASSEMBLY

1. Remove the 3 screws from the rear panel.
2. Remove the 4 screws from the bottom of the wooden cabinet. Pull the receiver forward off from the wooden cabinet.
3. Pull off all knobs, then remove the nuts and washers from their shafts.
   The front panel can be now removed.

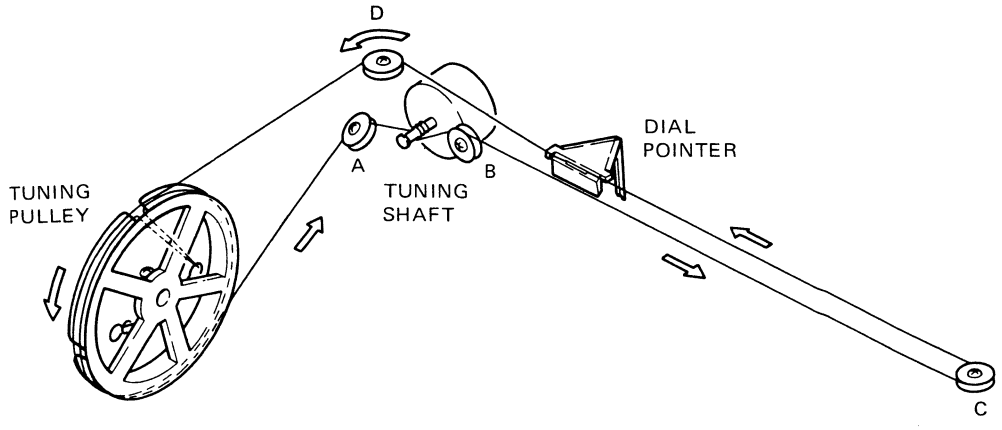


5. PARTS AND P.C. BOARD LOCATION



6. DIAL CORD STRINGING

1. Set the tuning capacitor to minimum capacitance.
2. Tie one end of the string to the spring on the tuning pulley.
3. Wind the string ½ turn around the tuning pulley, then lead it to the small pulley A.
4. Wind the string 3 turns around the tuning shaft, then lead it to the small pulleys B and C.
5. Lead the string around the small pulley D, then wind it 1 turn around the tuning pulley.
6. Finally, tie end of the string to the remaining side of the spring on the tuning pulley.
7. Tune the receiver to low end. Fasten the dial pointer to the string so that it indicates the low end of the dial scale.



7. ALIGNMENT PROCEDURE

REQUIRED INSTRUMENTS

- FM/AM Signal generator
- FM/AM Sweep generator: Center frequency 10.7MHz, 455kHz
- Oscilloscope
- AC VTVM
- FM multiplex signal generator preferably with RF output

7.1 FM/AM IF ALIGNMENT

• FM SECTION

1. Connect a 0.01μF capacitor between TP 1 and ground before the alignment.
2. Connect a 220kΩ resistor in series with the vertical input terminal of the oscilloscope.
3. Remove the meter lead from terminal 18, then terminate a 4.7kΩ resistor between terminal 18 and ground.
4. Connect the vertical input to terminal 18.
5. Set the FUNCTION switch to FM.
6. Connect the output lead of the sweep generator to the FM antenna terminals.
7. Set the output level of the sweep generator to 90dB.
8. Adjust the primary and secondary cores of T6 to obtain a symmetrical pattern.
9. Set the output level of the sweep generator to 70dB.
10. Adjust the cores of T4 and T5 for maximum gain and symmetry of the pattern.
11. Vary the output level of the sweep generator from 60dB to 100dB, then keep the top of the pattern flat and make sure that the center frequency does not drift. If it drifts, repeat steps (7) to (10).
12. Remove the capacitor (4.7μF) from terminal 28.
13. Disconnect the vertical input from terminal 18, then reconnect it to TP1.
14. Set the output level of the sweep generator to 70dB.
15. Observe the S-curve pattern when adjusting the cores of T7. (Linearity is improved by the primary core; symmetry by the secondary core.)
16. Disconnect the 0.01μF capacitor from TP1 after the alignment has been completed.
17. Connect the capacitor (4.7μF) to terminal 28 after the alignment has been completed.

• AM SECTION

1. Turn the FUNCTION switch to AM.
2. Connect the output lead of the sweep generator to the AM antenna terminal.
3. Connect the vertical input of the oscilloscope to the TAPE REC jack.
4. Set the output level of the sweep generator to 75dB.
5. Adjust the IFT cores (T9, T10, T11) for maximum gain and symmetrical pattern.

7.2 FM/AM TRACKING ALIGNMENT

• FM SECTION

1. Turn the FUNCTION switch to FM.
2. Connect the output leads of the FM signal generator to the FM antenna terminals.
3. Set the FM signal generator to modulation 400Hz, 30% and output level 15dB frequency 90MHz; also set the receiver dial at 90MHz.
4. Connect the VTVM and oscilloscope (in parallel) to the TAPE REC jack.
5. Observing the output level on the VTVM, adjust the following cores for maximum reading on the meter.
   T3 . . . . . Oscillator circuit
   T1 . . . . . Antenna circuit
   T2 . . . . . RF circuit
6. Set the frequency of the FM signal generator and the receiver dial to 106MHz.
7. Adjust as follows:
   Trimmer capacitor CT3: Oscillator circuit
   Trimmer capacitor CT1 . . Antenna circuit
   Trimmer capacitor CT2 . . . . . RF circuit
8. Repeat steps (5) to (7) several times.
9. Set the output level of the FM signal generator to maximum signal meter deflection.
10. Adjust the primary core of T7 for minimum sound distortion.

- **AM SECTION**

1. Turn the FUNCTION switch to AM.
2. Connect the AM signal generator to the AM antenna terminal.
3. Set the AM signal generator to modulation 400Hz, 30%, output level 30dB, frequency 600kHz. Set the receiver dial at 600kHz.
4. Connect the VTVM and oscilloscope (in parallel) to the TAPE REC jack.
5. Observing the output level on the VTVM, adjust the following cores for maximum reading.
   T8 . . . . . Oscillator circuit
   Ferrite loopstick antenna: Antenna circuit
6. Set the AM signal generator and the receiver dial to 1,400kHz.
7. Observing the output level on the VTVM, adjust the following cores for maximum reading.
   CT5 . . . . . Oscillator circuit
   CT4 . . . . . Antenna circuit
8. Repeat steps (5) to (7) several times.
9. After these alignments, lock the trimmer capacitor with paint.

7.3 MPX DECODER ALIGNMENT

1. Modulate the FM signal generator output by FM MPX modulator.
2. Turn the FUNCTION switch to FM.
3. Connect the FM signal generator to the FM antenna terminals.
4. Set the FM MPX modulator to modulation; main 1kHz (L+R) 60%, pilot 8~10%.
5. Set the output level of the FM signal generator to 60dB.
6. Turn the tuning knob to maximum reading on the signal meter.
7. Set the modulation of the FM MPX modulator to pilot only.
8. Connect the oscilloscope to TP2.
9. Adjust the transformers (T13, T14, T15) until the output level of the 19kHz becomes maximum on the scope.
10. Set the FM MPX modulator to pilot with L or R signal.
11. Connect the dual-trace oscilloscope and VTVM to the TAPE REC jacks.
12. Adjust the semi-fixed potentiometer on the tuner assembly until the output level of the L or R signal becomes maximum on the scope.

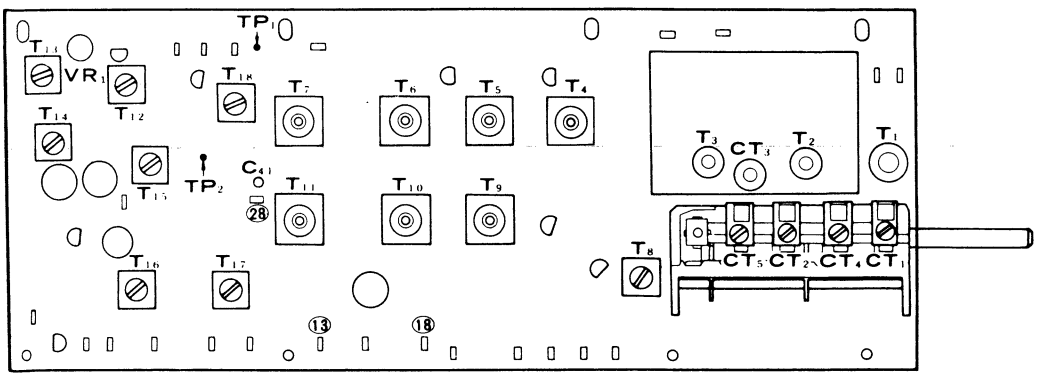
7.4 OTHER ALIGNMENTS

- **CHECKING THE SCA FILTER**

1. Connect the FM signal generator to the FM antenna terminals.
2. Modulate the FM signal generator with the audio signal generator.
   Set the output level of the FM signal generator to 60dB.
   Measure the frequency response at the TAPE REC jack. Check that the frequency response shows troughs at around 67kHz and 72kHz.
3. Should the item (2) give the unsatisfactory result, adjust T18 and T12.

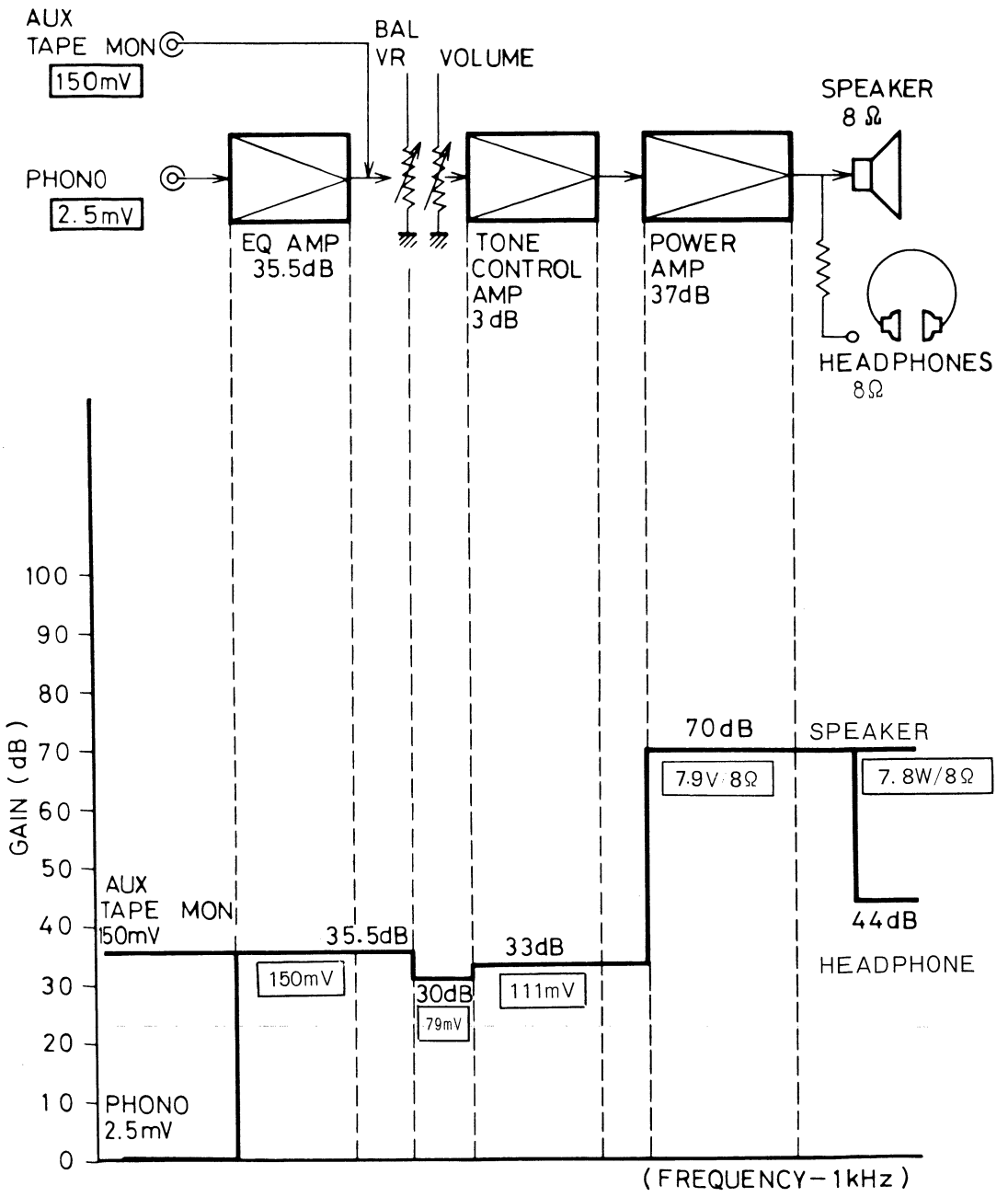
- **CHECKING THE STEREO INDICATOR**

1. Connect the FM MPX signal generator to the FM antenna terminals.
2. Set the FM MPX signal generator to pilot signal on and its output level to 25dB. Check that the stereo indicator lamp goes on. Then turn the pilot signal off, the stereo indicator lamp must go out.

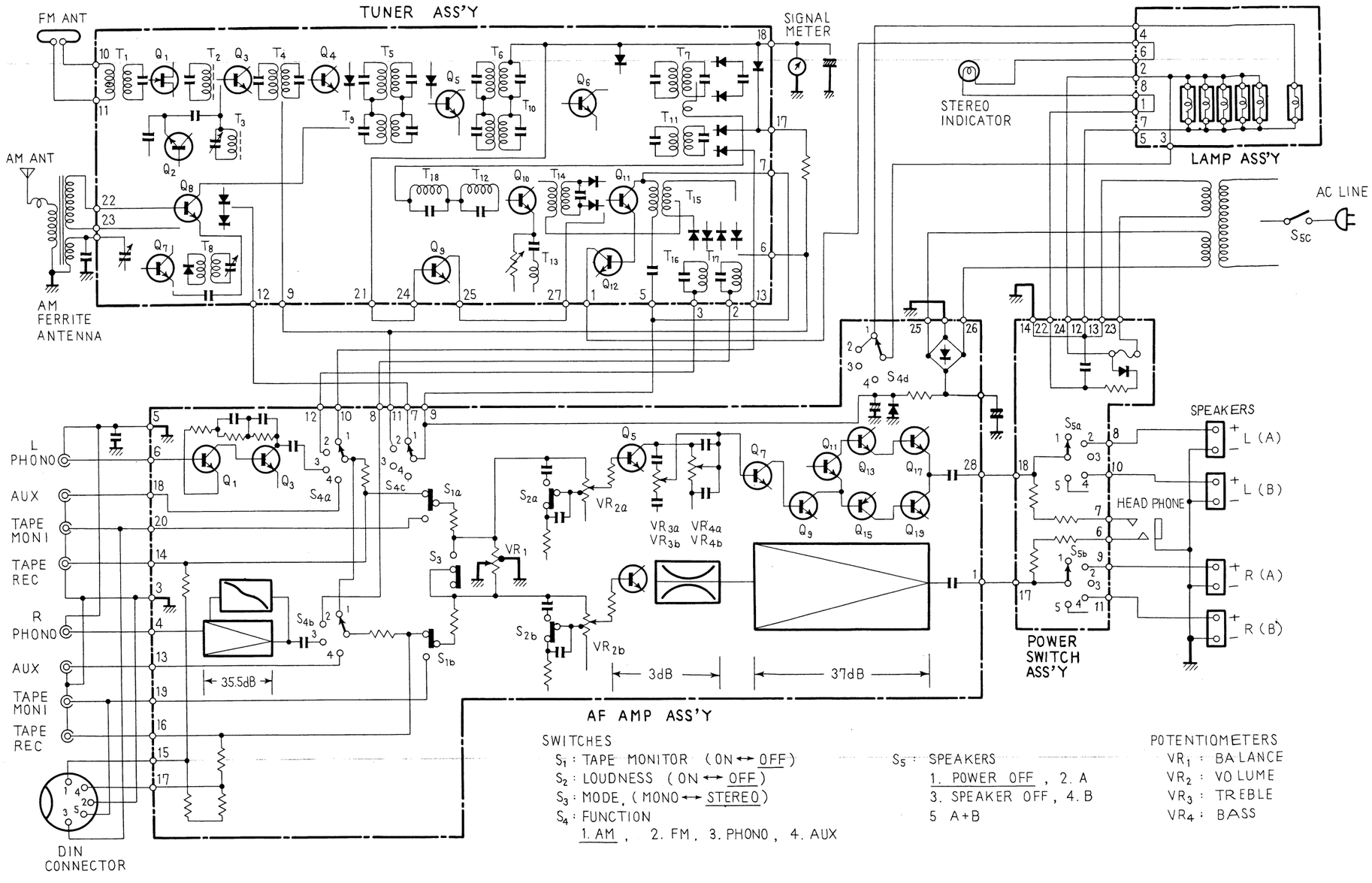


Tuner Assembly (AWE-004)

8. LEVEL DIAGRAM



9. BLOCK DIAGRAM



SWITCHES

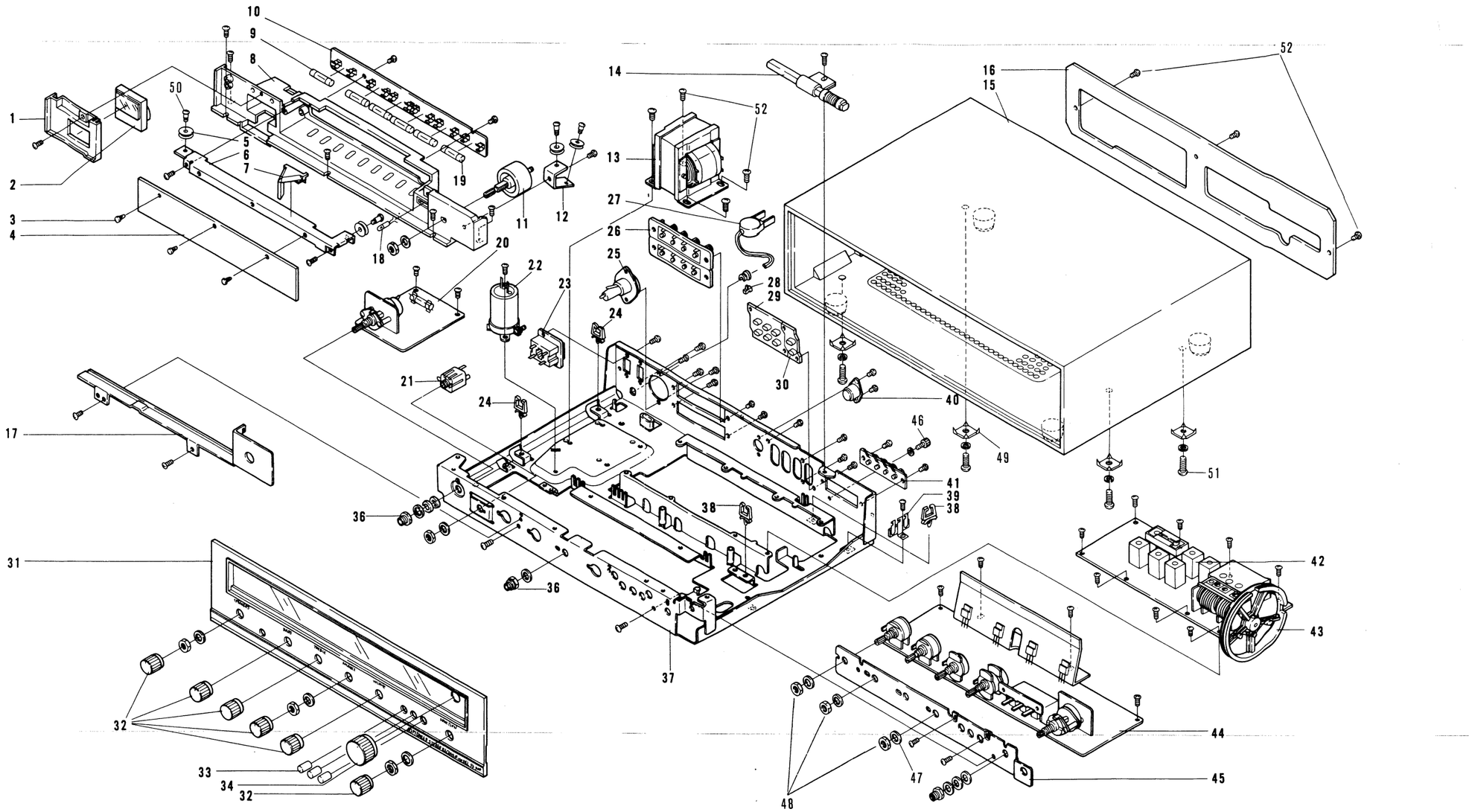
S_1 : TAPE MONITOR (ON ↔ OFF)
S_2 : LOUDNESS (ON ↔ OFF)
S_3 : MODE, (MONO ↔ STEREO)
S_4 : FUNCTION
1. AM , 2. FM, 3. PHONO , 4. AUX

S_5 : SPEAKERS
1. POWER OFF , 2. A
3. SPEAKER OFF , 4. B
5 A+B

POTENTIOMETERS

VR_1 : BALANCE
VR_2 : VOLUME
VR_3 : TREBLE
VR_4 : BASS

10. EXPLODED VIEW AND PARTS LIST



NOTE
Parts number is subject to change for the purpose of improvement with notice of a service bulletin.
Service bulletin will be furnished whenever necessary and you are requested to amend parts number in this manual according to the instructions.

Parts List of Exploded View

NOTICE:
Any parts asterisked* are subject to being not supplied.

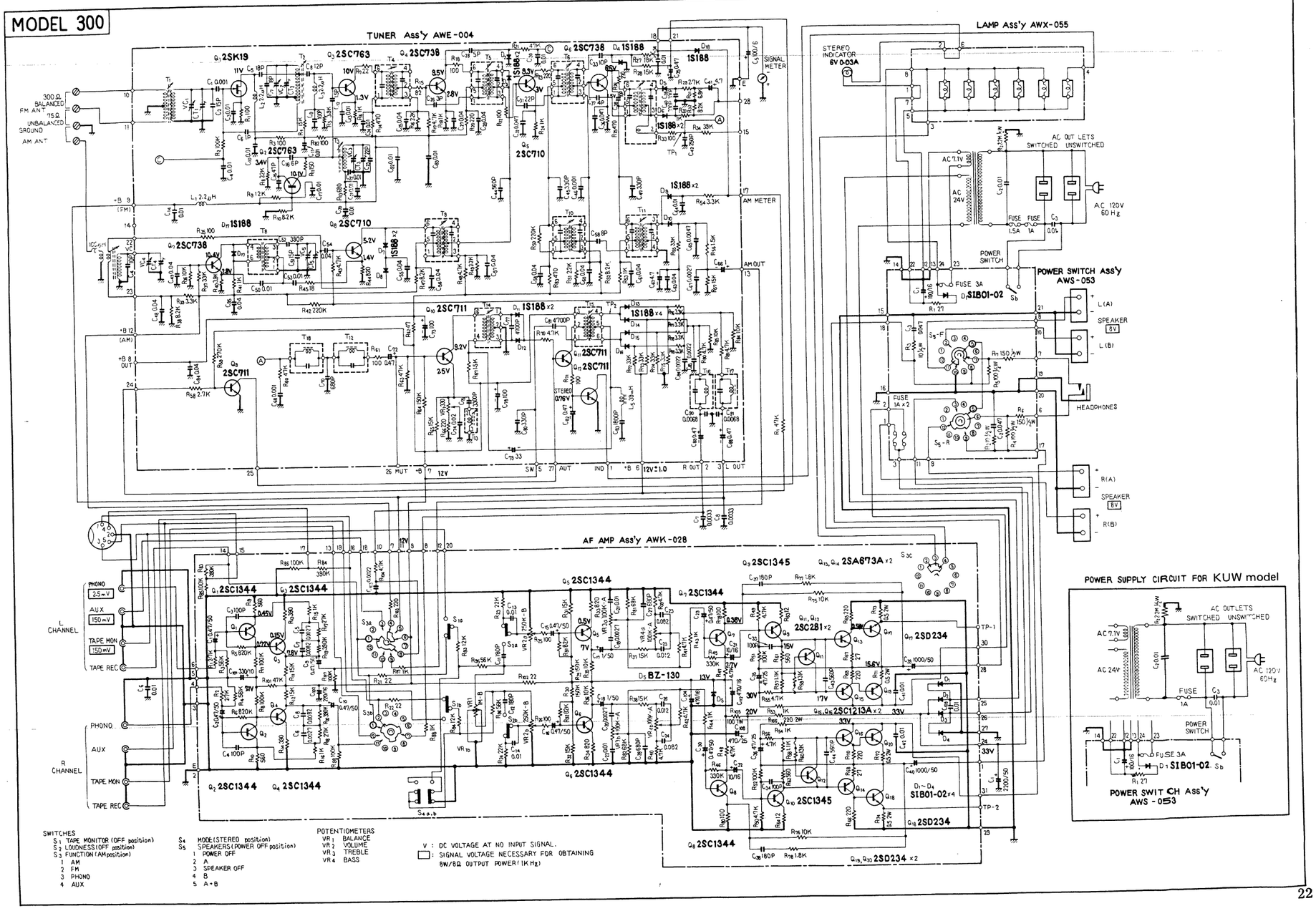
Key No.	Description	Part No.	
1*	Meter-holder	AEC-107-0	
2	Signal meter	AAW-027-0	KUW, KCW models
	Signal meter	AAW-003-0	FVW, NBW models
3	Clip (Dial scale holder)	AEC-036-A	
4	Dial scale	AAG-068-0	
5	Pulley	AEC-006-0	
6	Dial scale holder	AND-062-0	
7	Dial pointer	AAF-029-0	
8*	Lamp box	AEC-106-0	FVW, NBW models
	Lamp box	AEC-129-0	KUW, KCW models
9	Pilot lamp 8V 0,3A (Dial scale)	E22-017-0	
10	Lamp assembly	AWX-055-0	
11	Tuning shaft assembly	AXA-033-0	
12	Pulley-held metal	ANG-085-0	
13	Power transformer	ATT-148-0	NBW model
	Power transformer	ATT-149-0	FVW model
	Power transformer	ATT-150-0	KUW model
	Power transformer	ATT-151-0	KCW model
14	Ferrite loopstick antenna	T42-018-F	
15	Wooden cabinet	AMM-027-0	
16*	Rear panel	AAK-011-0	FVW, model
	Rear panel	AAK-012-0	KUW, KCW models
	Rear panel	AAK-010-0	NBW model
17	Dial scale-held metal	ANF-139-0	
18	Pilot lamp 6V 0,03A (Indicator)	AEL-006-0	
19	Pilot lamp 8V 0,3A (Dial scale)	E22-017-0	
20	Power switch circuit assembly	AWS-051-0	NBW model
	Power switch circuit assembly	AWS-052-0	FVW model
	Power switch circuit assembly	AWS-053-0	KUW, KCW models
21	Phone jack (HEAD)	K72-026-0	
22	Electrolytic capacitor 2,200μF 50V	ACH-021-0	
23	AC socket	AKP-004-0	FVW model
			models
24*	Wire clip (D)	AEC-024-0	KUW, KCW models
	Wire clip (B)	ACE-005-0	FVW, NBW models
25	Fuse holder (AC power)	AKR-001-0	FVW model
	Fuse holder (AC power)	AKR-005-0	KUW, KCW models
26	Speaker output terminal	AKA-001-0	
27	AC power cord	ADG-004-0	FVW model
	AC power cord	ADG-005-0	KUW, KCW models
	AC power cord	D54-019-0	NBW model
28	AC cord grommet	AEC-079-0	

Key No.	Description	Part No.	
29	Phono jack (6P)	AKB-018-0	
30	Phono jack (2P)	AKB-013-0	
31	Front panel assembly	ANB-211-0	FVW, NBW models
	Front panel assembly	ANB-231-0	KUW, KCW models
32	Knob (SPEAKERS, BASS, TREBLE, BALANCE, VOLUME, FUNCTION)	AAB-063-0	
33	Knob (Push button)	AAD-044-A	
34	Knob (TUNING)	AAA-022-0	
36	Boss	ALA-008-0	
37*	Chassis	ANA-048-B	
38*	Wire clip (D)	AEC-024-0	
39	Terminal strip (1L2P)	K13-027-A	
40	Connector (DIN type 5P)	K93-003-B	
41	Antenna terminal board	AKA-003-0	
42	Tuner assembly	AWE-004-B	
43	Tuning pulley assembly	M42-060-E	
44	AF amplifier assembly	AWK-028-0	
45*	Sub panel	ANA-050-A	
46	Binding post (GROUND)	B11-012-A	
47	Washer	B22-016-0	
48	Nut 9ϕ	B71-004-0	
49	Lock washer	KBE-002-A	
50*	Pulley shaft	M49-025-E	
51	Screw M4 x 20		
52	Tapping screw M4 x 8		

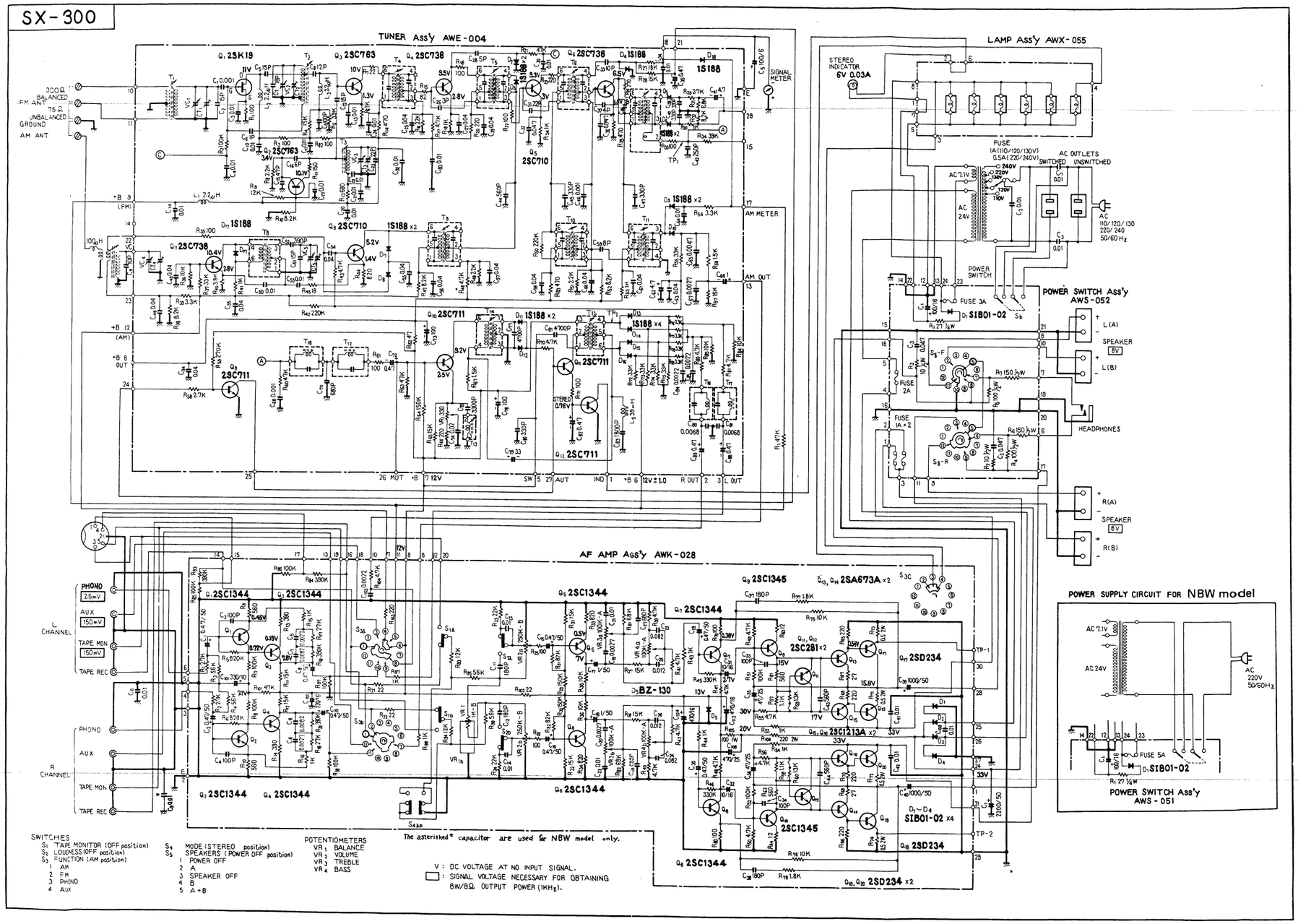
Exploded View

11. SCHEMATIC DIAGRAMS, P.C. BOARD PATTERNS AND PARTS LISTS

11.1 CIRCUIT CONNECTION DIAGRAM AND MISCELLANEOUS PARTS



SX-300


TUNER Ass'y AWE-004
LAMP Ass'y AWX-055
AF AMP Ass'y AWK-028
POWER SWITCH Ass'y AWS-052
POWER SUPPLY CIRCUIT FOR NBW model
POWER SWITCH Ass'y AWS-051
300Ω BALANCED FM ANT
75Ω UNBALANCED
GROUND
AM ANT
SIGNAL METER
AM METER
AM OUT
STEREO INDICATOR 6V 0.03A
FUSE 1A(110/120/130V) 0.5A(220/240V)
AC OUTLETS SWITCHED UNSWITCHED
AC 110/120/130 220/240 50/60Hz
POWER SWITCH
FUSE 3A
FUSE 2A
FUSE 1A×2
FUSE 5A
SPEAKER 8Ω
HEADPHONES
L(A)
L(B)
R(A)
R(B)
AC 24V
AC 7.1V
AC 220V 50/60Hz
PHONO 2.5mV
AUX 150mV
TAPE MON 150mV
TAPE REC
L CHANNEL
R CHANNEL
SWITCHES
S1 TAPE MONITOR (OFF position)
S2 LOUDNESS (OFF position)
S3 FUNCTION (AM position)
1 AM
2 FM
3 PHONO
4 AUX
S4 MODE (STEREO position)
S5 SPEAKERS (POWER OFF position)
1 POWER OFF
2 A
3 SPEAKER OFF
4 B
5 A+B
POTENTIOMETERS
VR1 BALANCE
VR2 VOLUME
VR3 TREBLE
VR4 BASS
The asterisked* capacitor are used for NBW model only.
V : DC VOLTAGE AT NO INPUT SIGNAL.
□ : SIGNAL VOLTAGE NECESSARY FOR OBTAINING 8W/8Ω OUTPUT POWER (1KHz).

- CAPACITORS: IN μF UNLESS OTHERWISE NOTED p:pF
- RESISTORS: IN Ω, ¼W UNLESS OTHERWISE NOTED k:kΩ, M: MΩ

Miscellaneous Parts List

CAPACITORS

Symbol	Description			Part No.	
C1	Electrolytic	2,200	50V	ACH-021-0	
C2	Ceramic	0.01	250V	ACG-001-0	FVW model only
	Metallized mylar	0.01	800V	ACE-002-0	KUW model only
	Ceramic	0.01	250V	ACG-003-0	KCW model only
C3	Ceramic	0.01	250V	ACG-001-0	FVW, KUW, KCW models
C4	Ceramic	10	50V	CCDSL 100K 50	
C5	Electrolytic	100	6V	CEA 101P 6	
C6	Ceramic	0.01	50V	CKDYF 103Z 50	
C7	Ceramic	0.01	250V	ACG-001-0	FVW model only
	Mylar	0.0033	50V	CQMA 332M 50	KUW, KCW models
C8	Mylar	0.0033	50V	CQMA 332M 50	KUW, KCW models
C9	Ceramic	0.01	50V	CKDYB 103Z 50	NBW model only

RESISTORS

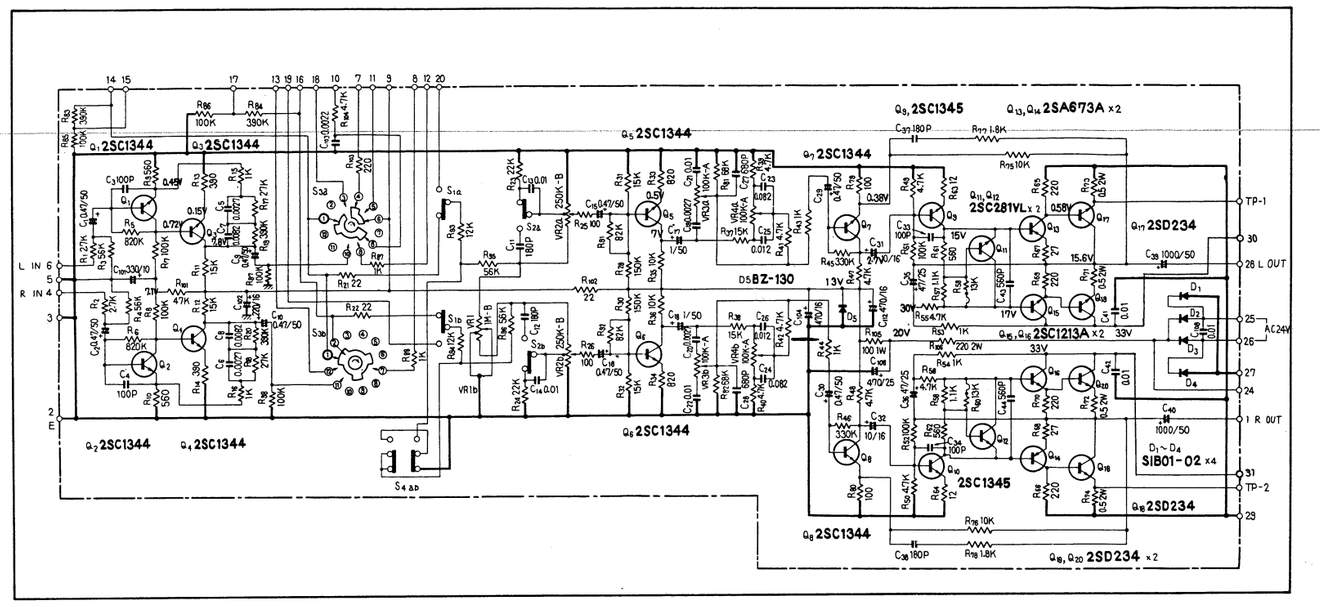
Symbol	Description			Part No.	
R1	Carbon film	47k		RD¼PS 473J	
R2	Carbon film	2.2M	½W	RD½PS 225J	KUW, KCW models

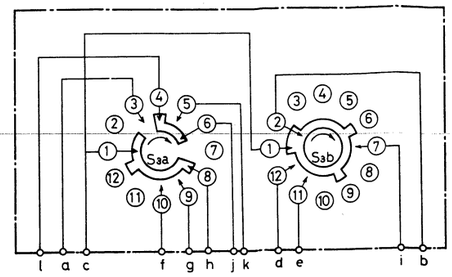
OTHERS

Symbol	Description	Part No.	
	Tuner assembly	AWE-004-B	
	AF amplifier assembly	AWK-028-0	
	Lamp assembly	AWX-055-0	
	Power switch circuit assembly	AWS-051-0	NBW model
	Power switch circuit assembly	AWS-052-0	FVW model
	Power switch circuit assembly	AWS-053-0	KUW, KCW models
	Power transformer	ATT-148-0	NBW model
	Power transformer	ATT-149-0	FVW model
	Power transformer	ATT-150-0	KUW model
	Power transformer	ATT-151-0	KCW model
	Ferrite loopstick antenna	T42-018-F	
	Choke coil 101k	T24-030-0	
	Speaker output terminal	AKA-001-0	
	Phono jack (2P)	AKB-013-0	
	Phono jack (6P)	AKB-018-0	
	Antenna terminal board	AKA-003-0	
	Fuse 1A (AC power)	E21-034-A	FVW model
	Fuse 1A (AC power)	E21-033-0	KUW, KCW models
	Fuse 1.5A (AC power)	AKE-029-0	KCW model
	Pilot lamp 6V, 0.03A (Indicator)	AEL-006-0	
	Pilot lamp 8V, 0.3A (Dial scale)	E22-017-0	
	AC socket	AKP-004-0	FVW, KUW, KCW models

Symbol	Description	Part No.	
	Connector (DIN type 5P)	K93-003-B	
	Fuse holder (AC power)	AKR-001-0	FVW model
	Fuse holder (AC power)	AKR-005-0	KUW, KCW models
	Phono jack (HEAD)	K72-026-0	
	AC power cord	ADG-004-0	FVW model
	AC power cord	D54-019-0	NBW model
	AC power cord	ADG-005-0	KUW, KCW models

11.2 AF AMPLIFIER ASSEMBLY (AWK-028-0)





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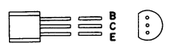

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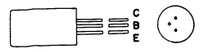
2SC281VL



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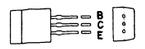

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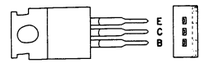
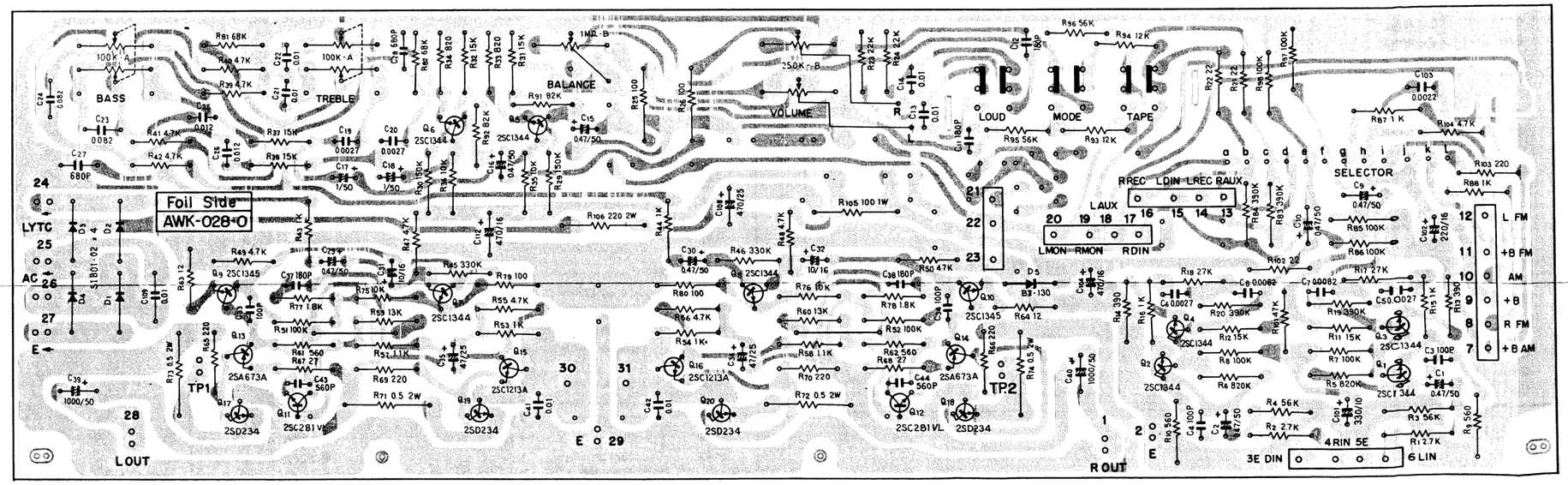




Parts List of AF Amplifier Assembly (AWK-028-0)

CAPACITORS

Symbol	Description			Part No.	
C1	Electrolytic	0.47	50V	CEA R47P 50	
C2	Electrolytic	0.47	50V	CEA R47P 50	
C3	Ceramic	100p	50V	CCDSL 101K 50	
C4	Ceramic	100p	50V	CCDSL 101K 50	
C5	Ceramic	0.0027	50V	CKDYB 272K 50	
C6	Ceramic	0.0027	50V	CKDYB 272K 50	
C7	Ceramic	0.0082	50V	CKDYB 822K 50	
C8	Ceramic	0.0082	50V	CKDYB 822K 50	
C9	Electrolytic	0.47	50V	CEA R47P 50	
C10	Electrolytic	0.47	50V	CEA R47P 50	
C11	Ceramic	180p	50V	CCDSL 181K 50	
C12	Ceramic	180p	50V	CCDSL 181K 50	
C13	Mylar	0.01	50V	CQMA 103K 50	
C14	Mylar	0.01	50V	CQMA 103K 50	
C15	Electrolytic	0.47	50V	CEA R47P 50	
C16	Electrolytic	0.47	50V	CEA R47P 50	
C17	Electrolytic	1	50V	CEA 010P 50	
C18	Electrolytic	1	50V	CEA 010P 50	
C19	Ceramic	0.0027	50V	CKDYB 272K 50	
C20	Ceramic	0.0027	50V	CKDYB 272K 50	
C21	Mylar	0.01	50V	CQMA 103K 50	
C22	Mylar	0.01	50V	CQMA 103K 50	
C23	Mylar	0.082	50V	CQMA 823K 50	
C24	Mylar	0.082	50V	CQMA 823K 50	
C25	Mylar	0.012	50V	CQMA 123K 50	
C26	Mylar	0.012	50V	CQMA 123K 50	
C27	Ceramic	680p	50V	CKDYB 681K 50	
C28	Ceramic	680p	50V	CKDYB 681K 50	
C29	Electrolytic	0.47	50V	CEA R47P 50	
C30	Electrolytic	0.47	50V	CEA R47P 50	
C31	Electrolytic	10	16V	CEA 100P 16	
C32	Electrolytic	10	16V	CEA 100P 16	
C33	Ceramic	100p	50V	CCDSL 101K 50	
C34	Ceramic	100p	50V	CCDSL 101K 50	
C35	Electrolytic	47	25V	CEA 470P 25	
C36	Electrolytic	47	25V	CEA 470P 25	
C37	Ceramic	180p	50V	CCDSL 181K 50	
C38	Ceramic	180p	50V	CCDSL 181K 50	
C39	Electrolytic	1,000	50V	CEA 102P 50	
C40	Electrolytic	1,000	50V	CEA 102P 50	
C41	Ceramic	0.01	50V	CKDYF 103Z 50	
C42	Ceramic	0.01	50V	CKDYF 103Z 50	
C43	Ceramic	560p	50V	CKDYB 561K 50	
C44	Ceramic	560p	50V	CKDYB 561K 50	

Symbol	Description			Part No.	
C101	Electrolytic	330	10V	CEA 331P 10	
C102	Electrolytic	220	16V	CEA 221P 16	
C103	Ceramic	0.0022	50V	CKDYB 222K 50	
C104	Electrolytic	470	16V	CEA 471P 16	
C108	Electrolytic	470	25V	CEA 471P 25	
C109	Ceramic	0.01	150V	ACG-004-0	
C112	Electrolytic	470	16V	CEA 471P 16	

RESISTORS AND POTENTIOMETERS

Symbol	Description		Part No.	
R1	Carbon film	2.7k	RD¼PS 272J	
R2	Carbon film	2.7k	RD¼PS 272J	
R3	Carbon film	56k	RD¼PS 563J	
R4	Carbon film	56k	RD¼PS 563J	
R5	Carbon film	820k	RD¼PS 824J	
R6	Carbon film	820k	RD¼PS 824J	
R7	Carbon film	100k	RD¼PS 104J	
R8	Carbon film	100k	RD¼PS 104J	
R9	Carbon film	560	RD¼PS 561J	
R10	Carbon film	560	RD¼PS 561J	
R11	Carbon film	15k	RD¼PS 153J	
R12	Carbon film	15k	RD¼PS 153J	
R13	Carbon film	390	RD¼PS 391J	
R14	Carbon film	390	RD¼PS 391J	
R15	Carbon film	1k	RD¼PS 102J	
R16	Carbon film	1k	RD¼PS 102J	
R17	Carbon film	27k	RD¼PS 273J	
R18	Carbon film	27k	RD¼PS 273J	
R19	Carbon film	390k	RD¼PS 394J	
R20	Carbon film	390k	RD¼PS 394J	
R21	Carbon film	22	RD¼PS 220J	
R22	Carbon film	22	RD¼PS 220J	
R23	Carbon film	22k	RD¼PS 223J	
R24	Carbon film	22k	RD¼PS 223J	
R25	Carbon film	100	RD¼PS 101J	
R26	Carbon film	100	RD¼PS 101J	
R29	Carbon film	150k	RD¼PS 154J	
R30	Carbon film	150k	RD¼PS 154J	
R31	Carbon film	15k	RD¼PS 153J	
R32	Carbon film	15k	RD¼PS 153J	
R33	Carbon film	820	RD¼PS 821J	
R34	Carbon film	820	RD¼PS 821J	
R35	Carbon film	10k	RD¼PS 103J	
R36	Carbon film	10k	RD¼PS 103J	
R37	Carbon film	15k	RD¼PS 153J	
R38	Carbon film	15k	RD¼PS 153J	
R39	Carbon film	4.7k	RD¼PS 472J	
R40	Carbon film	4.7k	RD¼PS 472J	
R41	Carbon film	4.7k	RD¼PS 472J	
R42	Carbon film	4.7k	RD¼PS 472J	

Symbol	Description			Part No.	
R43	Carbon film	1k		RD¼PS 102J	
R44	Carbon film	1k		RD¼PS 102J	
R45	Carbon film	330k		RD¼PS 334J	
R46	Carbon film	330k		RD¼PS 334J	
R47	Carbon film	4.7k		RD¼PS 472J	
R48	Carbon film	4.7k		RD¼PS 472J	
R49	Carbon film	4.7k		RD¼PS 472J	
R50	Carbon film	4.7k		RD¼PS 472J	
R51	Carbon film	100k		RD¼PS 104J	
R52	Carbon film	100k		RD¼PS 104J	
R53	Carbon film	1k		RD¼PS 102J	
R54	Carbon film	1k		RD¼PS 102J	
R55	Carbon film	4.7k		RD¼PS 472J	
R56	Carbon film	4.7k		RD¼PS 472J	
R57	Carbon film	1.1k		RD¼PS 112J	
R58	Carbon film	1.1k		RD¼PS 112J	
R59	Carbon film	13k		RD¼PS 133J	
R60	Carbon film	13k		RD¼PS 133J	
R61	Carbon film	560		RD¼PS 561J	
R62	Carbon film	560		RD¼PS 561J	
R63	Carbon film	12		RD¼PS 120J	
R64	Carbon film	12		RD¼PS 120J	
R65	Carbon film	220		RD¼PS 221J	
R66	Carbon film	220		RD¼PS 221J	
R67	Carbon film	27		RD¼PS 270J	
R68	Carbon film	27		RD¼PS 270J	
R69	Carbon film	220		RD¼PS 221J	
R70	Carbon film	220		RD¼PS 221J	
R71	Metal film	0.5	2W	RN2H 0R5K	
R72	Metal film	0.5	2W	RN2H 0R5K	
R73	Metal film	0.5	2W	RN2H 0R5K	
R74	Metal film	0.5	2W	RN2H 0R5K	
R75	Carbon film	10k		RD¼PS 103J	
R76	Carbon film	10k		RD¼PS 103J	
R77	Carbon film	1.8k		RD¼PS 182J	
R78	Carbon film	1.8k		RD¼PS 182J	
R79	Carbon film	100		RD¼PS 101J	
R80	Carbon film	100		RD¼PS 101J	
R81	Carbon film	68k		RD¼PS 683J	
R82	Carbon film	68k		RD¼PS 683J	
R83	Carbon film	390k		RD¼PS 394J	
R84	Carbon film	390k		RD¼PS 394J	
R85	Carbon film	100k		RD¼PS 104J	
R86	Carbon film	100k		RD¼PS 104J	
R87	Carbon film	1k		RD¼PS 102J	
R88	Carbon film	1k		RD¼PS 102J	
R91	Carbon film	82k		RD¼PS 823J	
R92	Carbon film	82k		RD¼PS 823J	
R93	Carbon film	12k		RD¼PS 123J	
R94	Carbon film	12k		RD¼PS 123J	
R95	Carbon film	56k		RD¼PS 563J	

Symbol	Description		Part No.	
R96	Carbon film	56k	RD¼PS 563J	
R97	Carbon film	100k	RD¼PS 104J	
R98	Carbon film	100k	RD¼PS 104J	
R101	Carbon film	47k	RD¼PS 473J	
R102	Carbon film	22	RD¼PS 220J	
R103	Carbon film	220	RD¼PS 221J	
R104	Carbon film	4.7k	RD¼PS 472J	
R105	Metal oxide	100 1W	RS1P 101K	
R106	Metal oxide	220 2W	RS2P 221K	
VR1	Variable resistor	1M-B (BALANCE)	ACV-015-0	
VR2	Variable resistor	250k-B (VOLUME)	ACV-124-0	
VR3	Variable resistor	100k-A (TREBLE)	ACV-123-0	
VR4	Variable resistor	100k-A (BASS)	ACV-123-0	

SEMICONDUCTORS

Symbol	Description		Part No.	
Q1	Transistor	2SC1344-E 2SC1327-T		
Q2	Transistor	2SC1344-E 2SC1327-T		
Q3	Transistor	2SC1344-E 2SC1327-T		
Q4	Transistor	2SC1344-E 2SC1327-T		
Q5	Transistor	2SC1344-E 2SC1327-T		
Q6	Transistor	2SC1344-E 2SC1327-T		
Q7	Transistor	2SC1344-E 2SC1327-T		
Q8	Transistor	2SC1344-E 2SC1327-T		
Q9	Transistor	2SC1345-E or F		
Q10	Transistor	2SC1345-E or F		
Q11	Transistor	2SC281VL-C or B		
Q12	Transistor	2SC281VL-C or B		
Q13	Transistor	2SA673A-C or B 2SA720R		
Q14	Transistor	2SA673A-C or B 2SA720R		
Q15	Transistor	2SC1213A-C or B 2SC1318R		
Q16	Transistor	2SC1213A-C or B 2SC1318R		
Q17	Transistor	2SD234-O or Y		
Q18	Transistor	2SD234-O or Y		
Q19	Transistor	2SD234-O or Y		
Q20	Transistor	2SD234-O or Y		

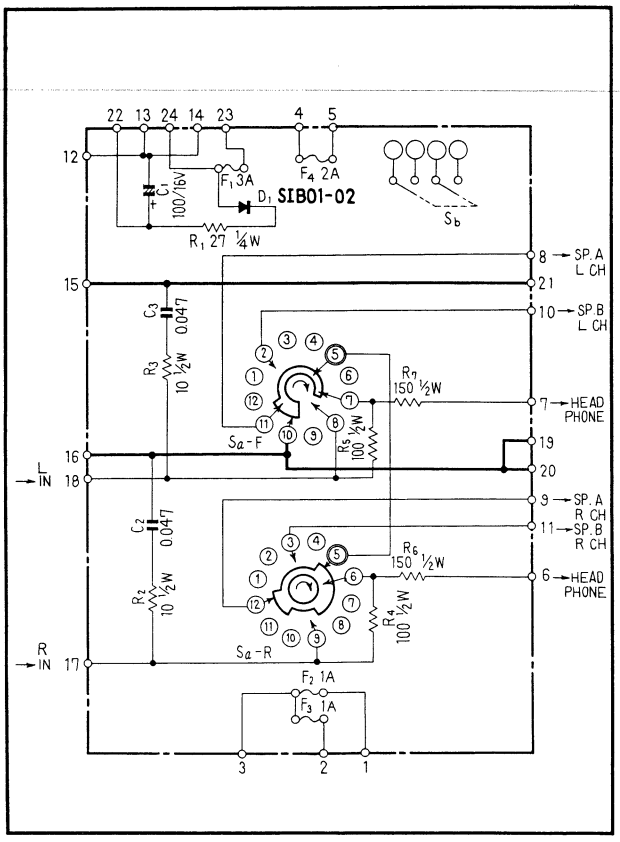
Symbol	Description	Part No.	
D1	Diode SIB01-02		
D2	Diode SIB01-02		
D3	Diode SIB01-02		
D4	Diode SIB01-02		
D5	Zener diode BZ-130		

SWITCHES

Symbol	Description	Part No.	
S1	Push switch (TAPE MON)	ASG-017-0	
S2	Push switch (LOUDNESS)	ASG-017-0	
S3	Rotary switch (FUNCTION)	ASD-005-0	
S4	Push switch (MONO)	ASG-017-0	

11.3 POWER SWITCH CIRCUIT ASSEMBLY (AWS-052-0)

This is exclusively used for FVW model.

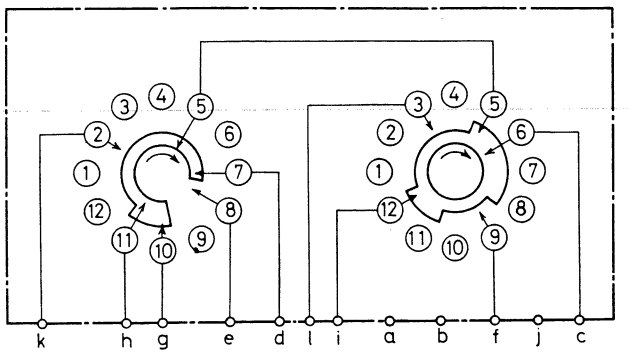


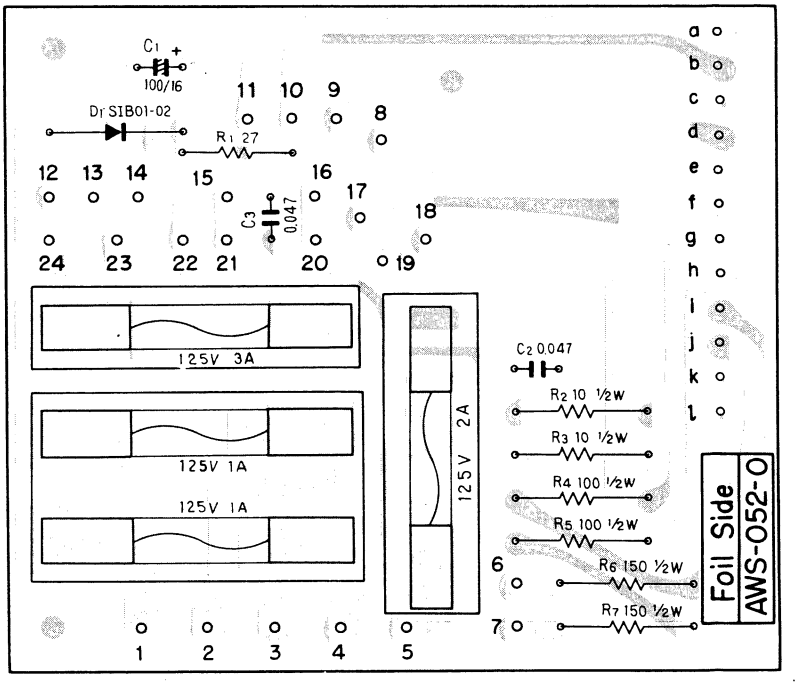
CAPACITORS

Symbol	Description			Part No.	
C1	Electrolytic	100	16V	CEA 101P 16	
C2	Mylar	0.047	50V	CQMA 473K 50	
C3	Mylar	0.047	50V	CQMA 473K 50	

RESISTORS

Symbol	Description			Part No.	
R1	Carbon film	27		RD¼PS 270J	
R2	Carbon film	10	½W	RD½PS 100K	
R3	Carbon film	10	½W	RD½PS 100K	
R4	Carbon film	100	½W	RD½PS 101K	
R5	Carbon film	100	½W	RD½PS 101K	
R6	Carbon film	150	½W	RD½PS 151K	
R7	Carbon film	150	½W	RD½PS 151K	



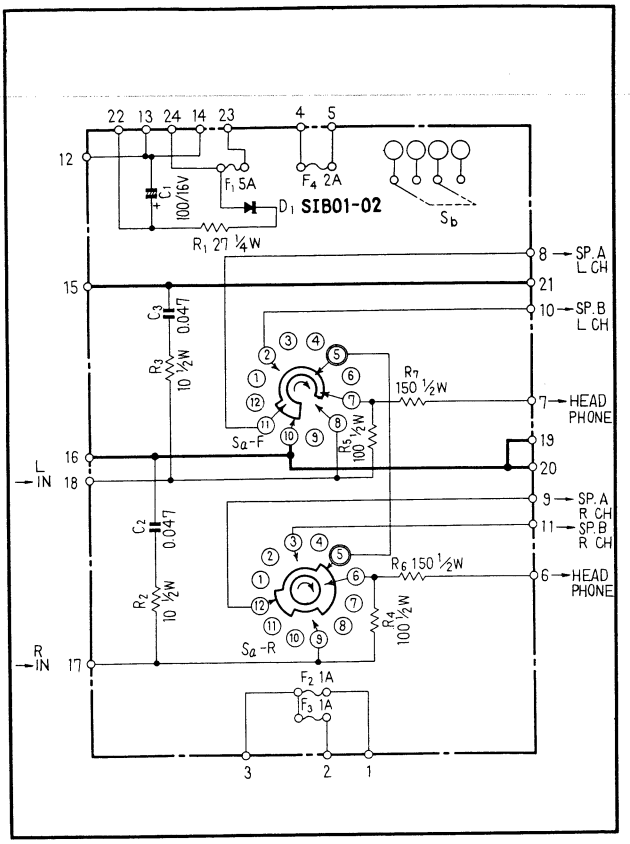


OTHERS

Symbol	Description	Part No.	
Sa	Rotary switch (SPEAKERS)	ASD-007-0	
D1	Diode SIB01-02		
F1	Protection fuse 3A (PROTECTION)	E21-036-A	
F2	Protection fuse 1A (PROTECTION)	E21-034-A	
F3	Protection fuse 1A (PROTECTION)	E21-034-A	
F4	Protection fuse 2A (PROTECTION)	E21-035-A	

11.4 POWER SWITCH CIRCUIT ASSEMBLY (AWS-051-0)

This is exclusively used for NBW model.

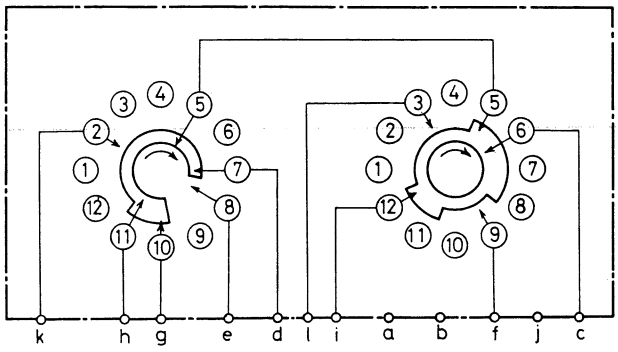


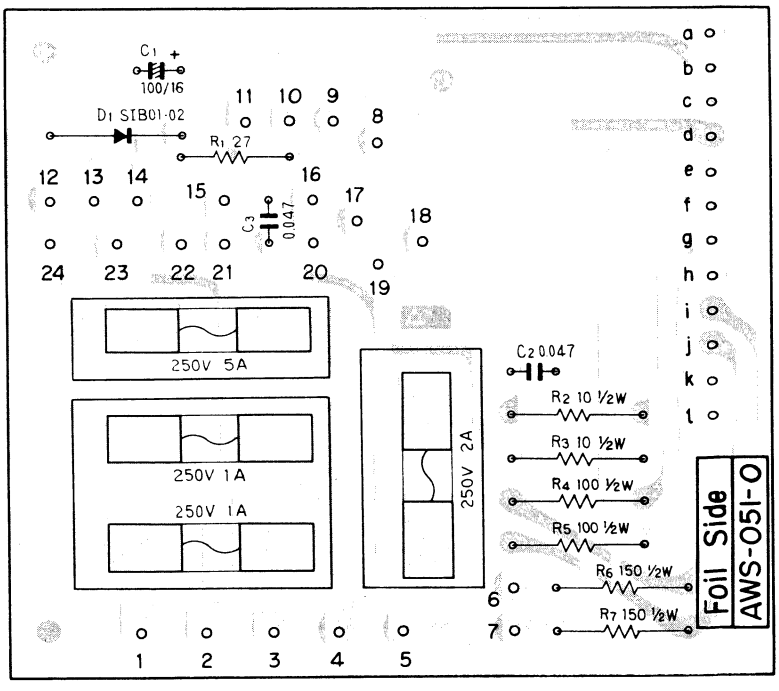
CAPACITORS

Symbol	Description			Part No.	
C1	Electrolytic	100	16V	CEA 101P 16	
C2	Mylar	0.047	50V	CQMA 473K 50	
C3	Mylar	0.047	50V	CQMA 473K 50	

RESISTORS

Symbol	Description			Part No.	
R1	Carbon film	27		RD¼PS 270J	
R2	Carbon film	10	½W	RD½PS 100K	
R3	Carbon film	10	½W	RD½PS 100K	
R4	Carbon film	100	½W	RD½PS 101K	
R5	Carbon film	100	½W	RD½PS 101K	
R6	Carbon film	150	½W	RD½PS 151K	
R7	Carbon film	150	½W	RD½PS 151K	



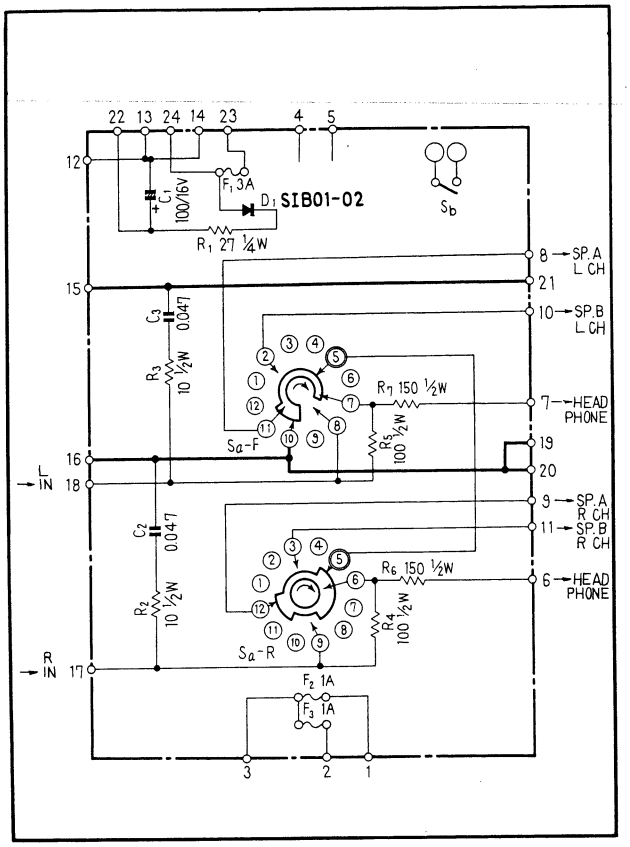


OTHERS

Symbol	Description	Part No.	
Sa	Rotary switch (SPEAKERS)	ASD-007-0	
D1	Diode SIB01-02		
F1	Protection fuse 5A (PROTECTION)	AEK-015-0	
F2	Protection fuse 1A (PROTECTION)	E21-031-0	
F3	Protection fuse 1A (PROTECTION)	E21-031-0	
F4	Protection fuse 2A (PROTECTION)	AEK-017-0	

11.5 POWER SWITCH CIRCUIT ASSEMBLY (AWS-053-0)

This is exclusively used for KUW and KCW models.

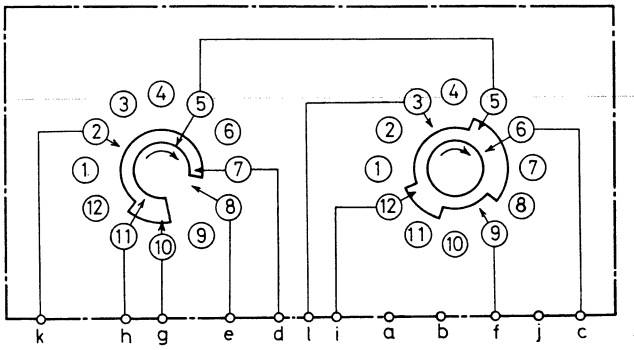


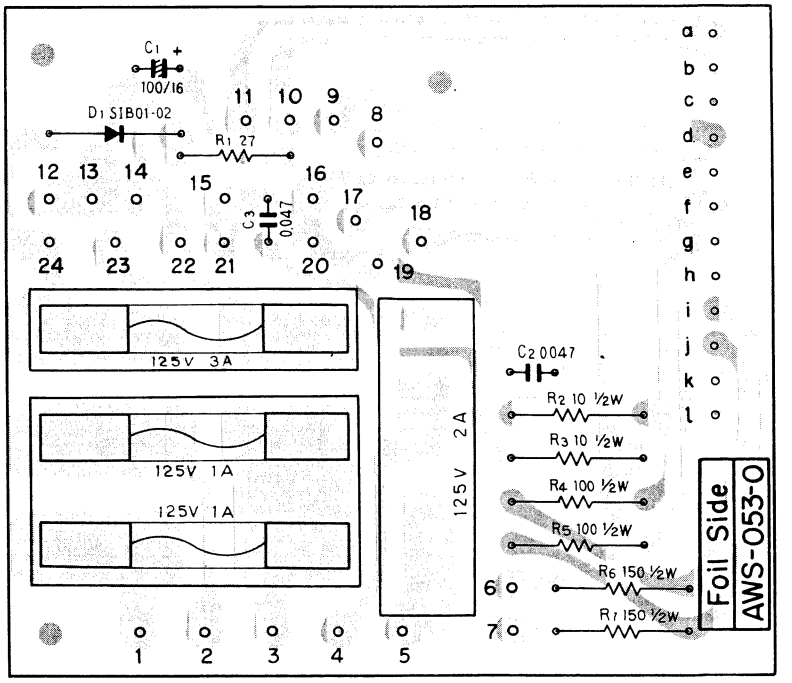
CAPACITORS

Symbol	Description			Part No.	
C1	Electrolytic	100	16V	CEA 101P 16	
C2	Mylar	0.047	50V	CQMA 473K 50	
C3	Mylar	0.047	50V	CQMA 473K 50	

RESISTORS

Symbol	Description			Part No.	
R1	Carbon film	27		RD¼PS 270J	
R2	Carbon film	10	½W	RD½PS 100K	
R3	Carbon film	10	½W	RD½PS 100K	
R4	Carbon film	100	½W	RD½PS 101K	
R5	Carbon film	100	½W	RD½PS 101K	
R6	Carbon film	150	½W	RD½PS 151K	
R7	Carbon film	150	½W	RD½PS 151K	

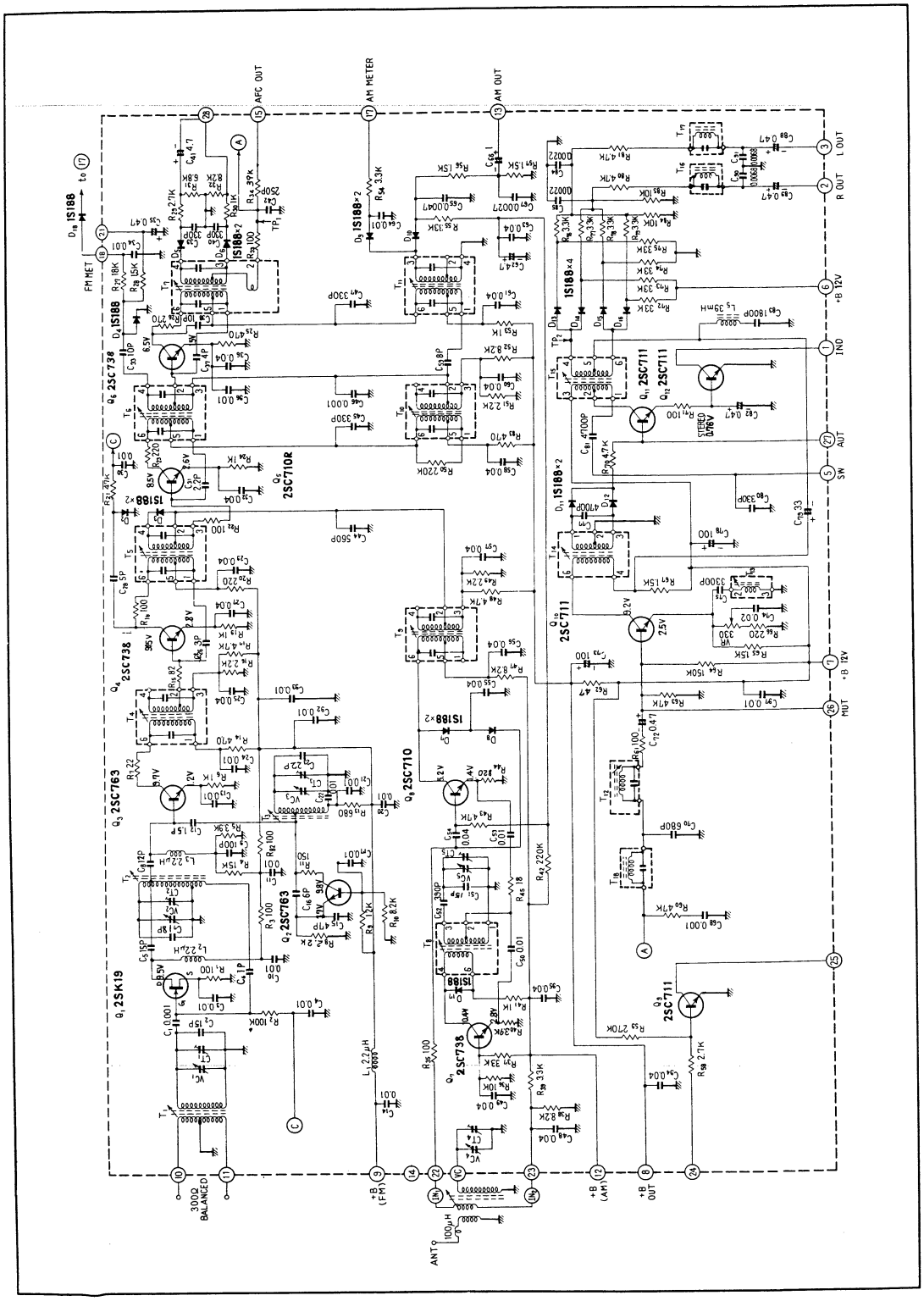




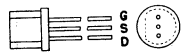
OTHERS

Symbol	Description	Part No.	
Sa	Rotary switch (SPEAKERS)	ASD-008-0	
D1	Diode SIB01-02		
F1	Protection fuse 3A (PROTECTION)	E21-036-A	
F2	Protection fuse 1A (PROTECTION)	E21-034-A	
F3	Protection fuse 1A (PROTECTION)	E21-034-A	

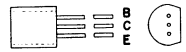
11.6 TUNER ASSEMBLY (AWE-004-B)



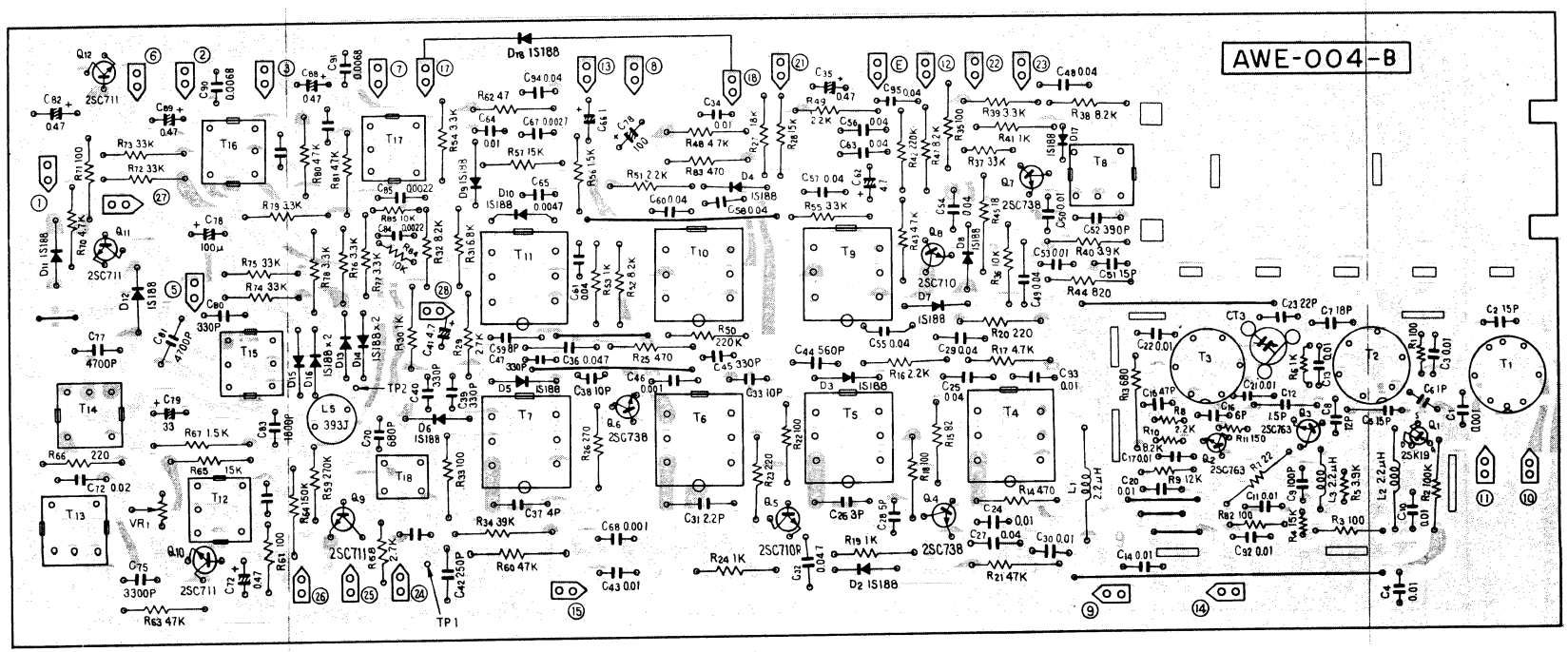
2SK19-Y



2SC763
2SC738
2SC710R
2SC710
2SC711



Foil side



Parts List of Tuner Assembly (AWE-004-B)

CAPACITORS

Symbol	Description			Part No.	
C1	Ceramic	0.001	50V	CKDYF 102Z 50	
C2	Ceramic	15p	50V	CCDSL 150K 50	
C3	Ceramic	0.01	50V	CKDYF 103Z 50	
C4	Ceramic	0.01	50V	CKDYF 103Z 50	
C5	Ceramic	15p	50V	CCDSL 150K 50	
C6	Ceramic	1p	500V	CGB 010K 500	
C7	Ceramic	18p	50V	CCDSL 180K 50	
C8	Ceramic	12p	50V	CCDSL 120K 50	
C9	Ceramic	100p	50V	CCDSL 101K 50	
C10	Ceramic	0.01	50V	CKDYF 103Z 50	
C11	Ceramic	0.01	50V	CKDYF 103Z 50	
C12	Ceramic	1.5p	500V	CGB 1R5K 500	
C13	Ceramic	0.01	50V	CKDYF 103Z 50	
C14	Ceramic	0.01	50V	CKDYF 103Z 50	
C15	Ceramic	47p	50V	CCDSL 470K 50	
C16	Ceramic	6p	50V	CCDTJ 060D 50	
C17	Ceramic	0.01	50V	CKDYF 103Z 50	
C20	Ceramic	0.01	50V	CKDYF 103Z 50	
C21	Ceramic	0.01	50V	CKDYB 103K 50	
C22	Ceramic	0.01	50V	CKDYB 103K 50	
C23	Ceramic	22p	50V	CCDRH 220K 50	
C24	Ceramic	0.01	50V	CKDYF 103Z 50	
C25	Ceramic	0.04	50V	CKDYF 403Z 50	
C26	Ceramic	3p	50V	CCDSL 030D 50	
C27	Ceramic	0.04	50V	CKDYF 403Z 50	
C28	Ceramic	5p	50V	CCDSL 050D 50	
C29	Ceramic	0.04	50V	CKDYF 403Z 50	
C30	Ceramic	0.01	50V	CKDYF 103Z 50	
C31	Ceramic	2.2p	500V	CGB 2R2K 500	
C32	Ceramic	0.047	25V	CKDBC 473Z 25	
C33	Ceramic	10p	50V	CCDSL 100K 50	
C34	Ceramic	0.01	50V	CKDYF 103Z 50	
C35	Electrolytic	0.47	50V	CEA R47P 50	
C36	Ceramic	0.047	25V	CKDBC 473Z 25	
C37	Ceramic	4p	50V	CCDSL 040D 50	
C38	Ceramic	10p	50V	CCDSL 100K 50	
C39	Ceramic	330p	50V	CKDYB 331K 50	
C40	Ceramic	330p	50V	CKDYB 331K 50	
C41	Electrolytic	4.7	25V	CEA 4R7P 25	
C42	Ceramic	250p	50V	CCDSL 251K 50	
C44	Ceramic	560p	50V	CKDYB 561K 50	
C45	Ceramic	330p	50V	CKDYB 331K 50	
C46	Ceramic	0.001	50V	CKDYB 102K 50	
C47	Ceramic	330p	50V	CKDYB 331K 50	
C48	Ceramic	0.04	50V	CKDYF 403Z 50	

Symbol	Description			Part No.	
C49	Ceramic	0.04	50V	CKDYF 403Z 50	
C50	Mylar	0.01	50V	CQMA 103K 50	
C51	Ceramic	15p	50V	CCDUJ 150K 50	
C52	Styrol	390p	50V	CQSA 391K 50	
C53	Mylar	0.01	50V	CQMA 103K 50	
C54	Ceramic	0.04	50V	CKDYF 403Z 50	
C55	Ceramic	0.04	50V	CKDYF 403Z 50	
C56	Ceramic	0.04	50V	CKDYF 403Z 50	
C57	Ceramic	0.04	50V	CKDYF 403Z 50	
C58	Ceramic	0.04	50V	CKDYF 403Z 50	
C59	Ceramic	8p	50V	CCDSL 080F 50	
C60	Ceramic	0.04	50V	CKDYF 403Z 50	
C61	Ceramic	0.04	50V	CKDYF 403Z 50	
C62	Electrolytic	4.7	25V	CEA 4R7P 25	
C63	Ceramic	0.04	50V	CKDYF 403Z 50	
C64	Ceramic	0.01	50V	CKDYF 103Z 50	
C65	Ceramic	0.0047	50V	CKDYB 472K 50	
C66	Electrolytic	1	50V	CEA 010P 50	
C67	Ceramic	0.0027	50V	CKDYB 272K 50	
C68	Ceramic	0.001	50V	CKDYB 102K 50	
C70	Styrol	680p	50V	CQSA 681J 50	
C72	Electrolytic	0.47	50V	CEA R47P 50	
C73	Electrolytic	100	16V	CEA 101P 16	
C74	Mylar	0.02	50V	CQMA 203K 50	
C75	Styrol	0.0033	50V	C15-011-A	
C77	Styrol	0.0047	50V	C15-013-A	
C78	Electrolytic	100	16V	CEA 101P 16	
C79	Electrolytic	33	16V	CEA 330P 16	
C80	Ceramic	330p	50V	CKDYB 331K 50	
C81	Styrol	0.0047	50V	C15-013-A	
C82	Electrolytic	0.47	50V	CEA R47P 50	
C83	Styrol	0.0018	50V	CQSA 182J 50	
C84	Mylar	0.0022	50V	CQMA 222K 50	
C85	Mylar	0.0022	50V	CQMA 222K 50	
C88	Electrolytic	0.47	50V	CEA R47P 50	
C89	Electrolytic	0.47	50V	CEA R47P 50	
C90	Mylar	0.0068	50V	CQMA 682K 50	
C91	Mylar	0.0068	50V	CQMA 682K 50	
C92	Ceramic	0.01	50V	CKDYF 103Z 50	
C93	Ceramic	0.01	50V	CKDYF 103Z 50	
C94	Ceramic	0.04	50V	CKDYF 403Z 50	
C95	Ceramic	0.04	50V	CKDYF 403Z 50	
VC	Tuning capacitor			C64-038-A	
CT3	Ceramic trimmer			C43-007-A	

RESISTORS

Symbol	Description		Part No.	
R1	Carbon film	100	RD¼VS 101J	
R2	Carbon film	100	RD¼PS 101J	
R3	Carbon film	100	RD¼VS 101J	
R4	Carbon film	15k	RD¼VS 153J	
R5	Carbon film	3.9k	RD¼VS 392J	
R6	Carbon film	1k	RD¼VS 102J	
R7	Carbon film	22	RD¼PS 220J	
R8	Carbon film	2.2k	RD¼VS 222J	
R9	Carbon film	12k	RD¼VS 123J	
R10	Carbon film	8.2k	RD¼VS 822J	
R11	Carbon film	150	RD¼VS 151 J	
R13	Carbon film	680	RD¼PS 681J	
R14	Carbon film	470	RD¼PS 471J	
R15	Carbon film	82	RD¼PS 820J	
R16	Carbon film	2.2k	RD¼PS 222J	
R17	Carbon film	4.7k	RD¼PS 472J	
R18	Carbon film	100	RD¼PS 101J	
R19	Carbon film	1k	RD¼PS 102J	
R20	Carbon film	220	RD¼PS 221J	
R21	Carbon film	47k	RD¼PS 473J	
R22	Carbon film	100	RD¼PS 101J	
R23	Carbon film	220	RD¼PS 221J	
R24	Carbon film	1k	RD¼PS 102J	
R25	Carbon film	470	RD¼PS 471J	
R26	Carbon film	270	RD¼PS 271J	
R27	Carbon film	18k	RD¼PS 183J	
R28	Carbon film	1.5k	RD¼PS 152J	
R29	Carbon film	2.7k	RD¼PS 272J	
R30	Carbon film	1k	RD¼PS 102J	
R31	Carbon film	6.8k	RD¼PS 682J	
R32	Carbon film	8.2k	RD¼PS 822J	
R33	Carbon film	100	RD¼PS 101J	
R34	Carbon film	39k	RD¼PS 393J	
R35	Carbon film	100	RD¼PS 101J	
R36	Carbon film	10k	RD¼PS 103J	
R37	Carbon film	33k	RD¼VS 333J	
R38	Carbon film	8.2k	RD¼PS 822J	
R39	Carbon film	3.3k	RD¼PS 332J	
R40	Carbon film	3.9k	RD¼PS 392J	
R41	Carbon film	1k	RD¼PS 102J	
R42	Carbon film	220k	RD¼PS 224J	
R43	Carbon film	4.7k	RD¼PS 472J	
R44	Carbon film	820	RD¼PS 821J	
R45	Carbon film	18	RD¼PS 180J	
R47	Carbon film	8.2k	RD¼PS 822J	
R48	Carbon film	4.7k	RD¼PS 472J	
R49	Carbon film	2.2k	RD¼PS 222J	
R50	Carbon film	220k	RD¼PS 224J	
R51	Carbon film	2.2k	RD¼PS 222J	
R52	Carbon film	8.2k	RD¼PS 822J	

Symbol	Description		Part No.	
R53	Carbon film	1k	RD¼PS 102J	
R54	Carbon film	3.3k	RD¼PS 332J	
R55	Carbon film	33k	RD¼PS 333J	
R56	Carbon film	1.5k	RD¼PS 152J	
R57	Carbon film	1.5k	RD¼PS 152J	
R58	Carbon film	2.7k	RD¼PS 272J	
R59	Carbon film	270k	RD¼PS 274J	
R60	Carbon film	47k	RD¼PS 473J	
R61	Carbon film	100	RD¼PS 101J	
R62	Carbon film	47	RD¼PS 470J	
R63	Carbon film	47k	RD¼PS 473J	
R64	Carbon film	150k	RD¼PS 154J	
R65	Carbon film	1.5k	RD¼PS 152J	
R66	Carbon film	220	RD¼PS 221J	
R67	Carbon film	1.5k	RD¼PS 152J	
R70	Carbon film	4.7k	RD¼PS 472J	
R71	Carbon film	100	RD¼PS 101J	
R72	Carbon film	33k	RD¼PS 333J	
R73	Carbon film	33k	RD¼PS 333J	
R74	Carbon film	33k	RD¼PS 333J	
R75	Carbon film	33k	RD¼PS 333J	
R76	Carbon film	3.3k	RD¼PS 332J	
R77	Carbon film	3.3k	RD¼PS 332J	
R78	Carbon film	3.3k	RD¼PS 332J	
R79	Carbon film	3.3k	RD¼PS 332J	
R80	Carbon film	4.7k	RD¼PS 472J	
R81	Carbon film	4.7k	RD¼PS 472J	
R82	Carbon film	100	RD¼VS 101J	
R83	Carbon film	470	RD¼PS 471J	
R84	Carbon film	10k	RD¼VS 103J	
R85	Carbon film	10k	RD¼VS 103J	
VR1	Semi-fixed	330-B	C92-065-A	

SEMICONDUCTORS

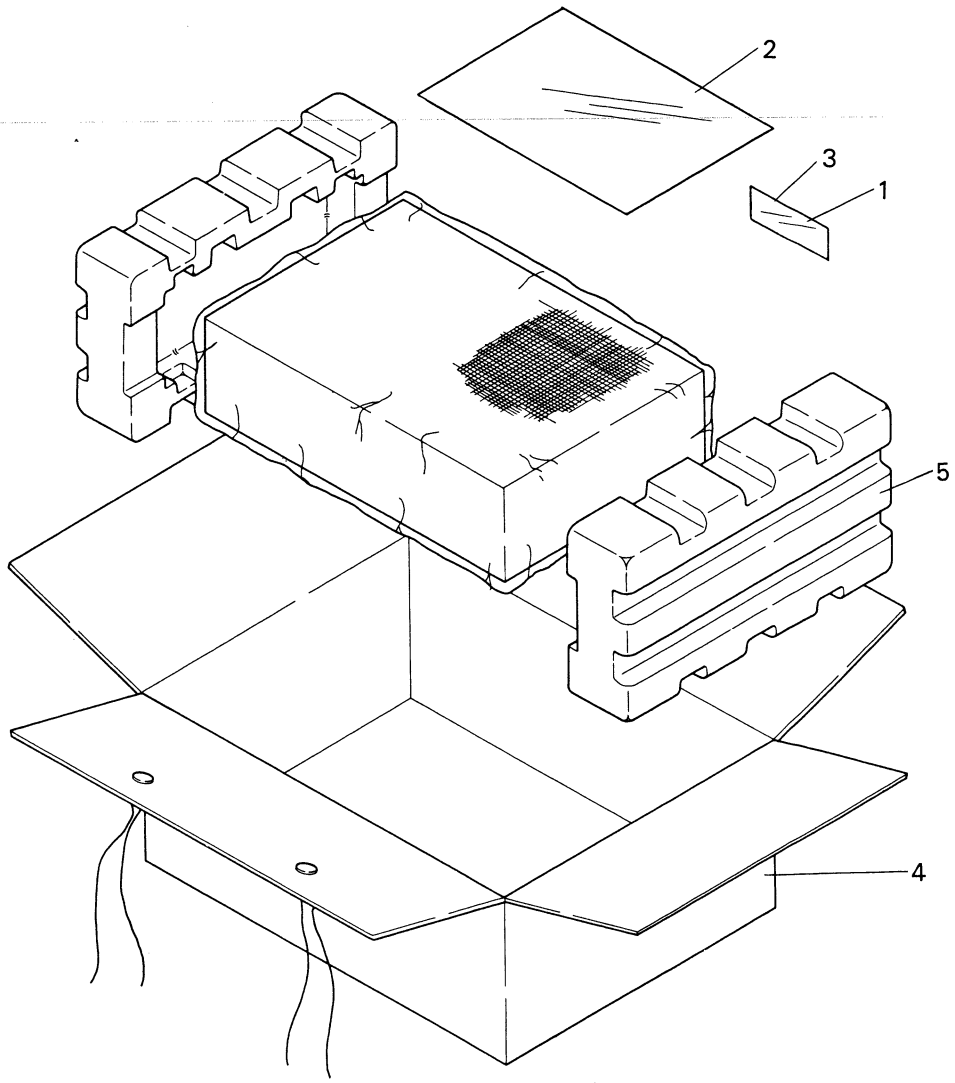
Symbol	Description		Part No.	
Q1	FET	2SK19-Y		
Q2	Transistor	2SC763-D or C		
Q3	Transistor	2SC763-D or C		
Q4	Transistor	2SC738-D		
Q5	Transistor	2SC710R-D or R, C		
Q6	Transistor	2SC738-D		
Q7	Transistor	2SC738-D or C		
Q8	Transistor	2SC710-D or R, D		
Q9	Transistor	2SC711-F		
Q10	Transistor	2SC711-E or F		
Q11	Transistor	2SC711-E or F		
Q12	Transistor	2SC711-F		

Symbol	Description		Part No.	
D2	Diode	1S188FM-1		
D3	Diode	1S188FM-1		
D4	Diode	1S188FM-1		
D5	Diode	1S188FM-1		
D6	Diode	1S188FM-1		
D7	Diode	1S188FM-1		
D8	Diode	1S188FM-1		
D9	Diode	1S188FM-1		
D10	Diode	1S188FM-1		
D11	Diode	1S188FM-1		
D12	Diode	1S188FM-1		
D13	Diode	1S188FM-1		
D14	Diode	1S188FM-1		
D15	Diode	1S188FM-1		
D16	Diode	1S188FM-1		
D17	Diode	1S188FM-1		
D18	Diode	1S188FM-1		

COILS AND TRANSFORMERS

Symbol	Description	Part No.	
T1	FM antenna coil	ATC-002-0	
T2	FM RF coil	ATC-004-0	
T3	FM OSC coil	ATC-003-0	
T4	FM IF transformer	T73-034-0	
T5	FM IF transformer	T73-035-A	
T6	FM IF transformer	T73-036-0	
T7	FM IF transformer	T74-011-0	
T8	AM OSC coil	ATB-001-A	
T9	AM IF transformer	T71-028-0	
T10	AM IF transformer	T71-028-0	
T11	AM IF transformer	T72-022-0	
T12	SCA filter	ATM-006-0	
T13	19kHz transformer	ATM-016-0	
T14	19kHz transformer	ATM-017-0	
T15	38kHz transformer	ATM-018-0	
T16	38kHz leak filter	ATM-004-0	
T17	38kHz leak filter	ATM-004-0	
T18	SCA filter	ATM-007-0	
L1	RF choke coil	T24-028-A	
L2	RF choke coil	T24-028-A	
L3	RF choke coil	T24-028-A	
L5	Choke coil	T75-006-B	

12. PACKING METHOD AND PARTS LIST



Key No.	Description	Part No.	
1	FM T-type antenna	D52-013-0	
2	Operating instructions	ARB-090-0	NBW model
	Operating instructions	ARB-091-0	FVW model
	Operating instructions	ARB-092-0	KUW, KCW models
3	Fuse 0,5A (AC power)	E21-007-0	FVW model
	Fuse 1A (Protection)	E21-034-A	FVW model
	Fuse 2A (Protection)	AEK-017-0	NBW model
4	Packing case	AHD-192-0	NBW model
	Packing case	AHD-193-0	FVW model
	Packing case	AHD-196-0	KUW model
	Packing case	AHD-197-0	KCW model
5	Side pad	AHA-037-0	

UKW-ABSTIMMUNG

Benötigte Geräte

- UKW-Meßoszillator
- UKW-Ablenkungsoszillator: Ruheträgerfrequenz 10,7 MHz
- Oszilloskop
- Wechselstrom-Röhrenvoltmeter

1. Den Funktionshebel auf FM MONO drehen.
2. Die Ausgangsleitungen des UKW-Meßoszillators mit den UKW-Antennenanschlüssen verbinden.
3. Den UKW-Meßoszillator auf Modulation 400 Hz, 30% und Ausgangsniveau 15 dB bei Frequenz 87,4 MHz bringen; auch ist der Abstimmknopf in die untere Position (linke Seite) zu bringen.
4. Röhrenvoltmeter und Oszilloskop (parallel) mit Anschluß TAPE REC verbinden.
5. Ausgangsniveau am Röhrenvoltmeter beobachten und die folgenden Leiter auf maximale Ablesung am Meter einstellen:
   T3 Oszillator-Schaltkreis
   T1 Antennenschaltkreis
   T2 HF-Abstimmkreis
6. Frequenz von UKW-Meßoszillator und Abstimmknopf auf 106 MHz einstellen.
7. Es ist wie folgt einzustellen:
   Trimmer-Kondensator CT 3
   Oszillator-Schaltkreis
   Trimmer-Kondensator CT1
   Antennenschaltkreis
   Trimmer-Kondensator CT2
   HF-Abstimmkreis
8. Stufen (5) bis (7) sind mehrmals zu wiederholen.
9. Das Ausgangsniveau des UKW-Meßoszillators ist auf maximale Meßgerät-Ablenkung einzustellen.